

3636 N. 124th Street Wauwatosa, WI 53222

Update to Post Closure Modification Request / Remedial Action Plan The Community Within the Corridor Development Former Wisconsin Industries Pension Plan & Trust 2748 N 32nd Street, Milwaukee, WI 53208 BRRTS # 02-41-263675 FID 24102540010200



Submitted To:

Ms. Jennifer Dorman Remediation and Redevelopment Program Wisconsin Department of Natural Resources 2300 North Martin Luther King Drive Milwaukee, WI, 53212



March 19, 2021

Ms. Jennifer Dorman Remediation and Redevelopment Program Wisconsin Department of Natural Resources 2300 North Martin Luther King Drive Milwaukee, WI, 53212 Project # 40405

Subject: Update to Post Closure Modification Request / Remedial Action Plan

The Community Within the Corridor Development Former Wisconsin Industries Pension Plan & Trust

2748 N 32nd Street, Milwaukee, WI 53208 BRRTS # 02-41-263675 FID 241025400

Dear Ms. Dorman:

On behalf of the Community Within the Corridor Limited Partnership, K. Singh & Associates, Inc. (KSingh) submits this Updated Request for Post-Closure Modification / Remedial Action Plan for the referenced site. KSingh requests a review and approval of this submittal and has provided payment of the review fee.

The site was granted Case Closure by the WDNR on August 26, 2018 with several continuing obligations. The property is proposed for redevelopment as a mixed use residential / commercial development and a Post Closure Modification Request was submitted to the WDNR in an application dated July 8, 2020. Based on a teleconference with the WDNR, a Sub-Slab Vapor Investigation was performed, and a vapor mitigation system has been designed for the facility. We have updated the Post Closure Modification Request and Remedial Action Plan for the facility based on the additional investigation. We request WDNR's approval of the Remedial Action Plan proposed in this request.

If we can be of further assistance in discussing this report with you, please contact us.

Sincerely,

K. SINGH & ASSOCIATES, INC.

Robert T. Reineke, P.E.

Project Manager

Pratap N. Singh, Ph.D., P.E.

Principal Engineer

cc: Mr. Shane LaFave / Roers Companies

Robert I Reinehe

Mr. Que El-Amin / Scott Crawford, Inc.

UPDATE TO POST CLOSURE MODIFICATION REQUEST / REMEDIAL ACTION PLAN

THE COMMUNITY WITHIN THE CORRIDOR DEVELOPMENT FORMER WISCONSIN INDUSTRIES PENSION PLAN & TRUST 2748 N 32ND STREET, MILWAUKEE, WI 53208 BRRTS # 02-41-263675 FID 241025400

MARCH 19, 2021

PREPARED BY

K. SINGH & ASSOCIATES, INC.
ENGINEERS, SCIENTISTS, AND CONSULTANTS
3636 N. 124th STREET
WAUWATOSA, WI 53222
(262) 821-1171
(262) 821-1174 FACSIMILE
www.ksinghengineering.com

PREPARED FOR

ROERS COMPANIES ATTN: MR. SHANE LAFAVE 110 CHESHIRE LANE, SUITE 120 MINNETONKA, MN 55305

PROJECT #40405



UPDATED REMEDIAL ACTION PLAN

THE COMMUNITY WITHIN THE CORRIDOR DEVELOPMENT FORMER WISCONSIN INDUSTRIES PENSION PLAN & TRUST 2748 N 32ND STREET, MILWAUKEE, WI 53208 BRRTS # 02-41-263675 FID 241025400

MARCH 19, 2021

I, Robert Reineke, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

I, Pratap Singh, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



relight like

Robert I Reinehe

TABLE OF CONTENTS

EXECUTIV	/E SUMMARY	1
SECTION	I. BACKGROUND INFORMATION	4
1.1	Introduction	4
1.2	Site Description and Location	4
1.3	Proposed Project Plans	
1.4	Property Owner and Responsible Party Information	5
1.5	Consultant Information	5
1.6	Regulatory Status of Site	5
1.7	Geologic and Hydrogeologic Characteristics	7
1.8	Summary of Nature and Extent of Contamination	7
1.8.1	Soil Quality	8
1.8.2	Groundwater Quality	10
1.8.3	Vapor Quality	
SECTION	II. SELECTED REMEDIAL ACTION	11
2.1	Soil Remediation	11
2.1.1	Excavation and Disposal of Contaminated Soils	11
2.1.2	Engineered Barriers / Continuing Obligations	11
2.2	Groundwater Remediation	12
2.2.1	Groundwater Management During Construction	12
2.3	Vapor Remediation and Vapor Mitigation Approach	12
2.3.1	Vapor System for Existing Building	13
2.4	Sustainable Remedial Action – NR 722.09	14
2.5	Proposed Schedule	15
SECTION	III. CONCLUSIONS AND RECOMMENDATIONS	16
3.1	Conclusions	16
3.2	Recommendations	17
3.3	Limitations of Data	18
SECTION	IV. REFERENCES	19

FIGURES TABLES APPENDICES



i

LIST OF FIGURES

Figure 1	Topographic Map of Project Location
Figure 2	Site Layout Map
Figure 3	Soil Isoconcentration Plume
Figure 4	Groundwater Analytical Results
Figure 5	Sub-Slab Vapors Sampling Results
Figure 6A	Soil Excavation Map
Figure 6B	Earthwork Calculations Exhibit
Figure 7	Engineered Barrier Plan
Figure 8	Engineered Barriers Details
Figure 9	Vapor Intrusion Mitigation Plan
Figure 10	Layout of the Proposed Vapor Mitigation System
Figure 11	Vapor Intrusion Mitigation Details



LIST OF TABLES

Table 1	Soil Quality Test Results
Гable 2	Groundwater Quality Test Results
Гable 3	Subslab Vapor Quality Test Results



LIST OF APPENDICES

Appendix A: Conceptual Site Plans



EXECUTIVE SUMMARY

The Community Within the Corridor Limited Partnership has purchased the property located at 2748 N 32nd Street and has initiated detailed planning and engineering for a mixed residential, retail, and commercial facility, known as the Community Within the Corridor. The East Block property, located at 2748 N 32nd Street, is 4.16 acres in size. The existing property and building is a former Briggs and Stratton manufacturing facility.

Project Background

The Community Within the Corridor Limited Partnership is proposing to redevelop the property into a mix of affordable housing, commercial spaces, and other amenities. The proposed development includes the following: The Corridor Lofts (64 Units), Creme City Lofts (36 Units) & 30 Square Townhomes (6 Units) and the Briggs Apartment Homes (91 Units) and a Community Service Facility which will include early childhood education, Science, Technology, Engineering, Art & Math after school programming, a health club (Basketball, Volleyball & Futsal, Skatepark), laundromat and a petite grocery store. The property has been rezoned Industrial Mix to facilitate development of the project.

No demolition of existing buildings is planned. The building interiors will be renovated and reconfigured. A ramp will be constructed to utilize the basement as a parking garage. Paved areas will be milled and paved or have pavement removed, be regraded, and then restored with asphalt.

The property was previously investigated and granted Case Closure with continuing obligations as an industrial property under BRRTS # 02-41-263675. KSingh was retained to perform environmental consulting services for the redevelopment of the property. Following a Phase I Environmental Site Assessment, and Sub-Slab Vapor Sampling, a Post-Closure Modification Request was submitted to the WDNR on July 8, 2020. Following submission of the Post-Closure Modification Request, KSingh performed a Sub-Slab Vapor Investigation of the building. Based on the Sub-Slab Vapor Investigation, it was determined that a vapor mitigation system would be required for the facility in addition to construction and maintenance of engineered barriers.

Soil Quality Risks

Near surface soils throughout much of the site exceed groundwater protection or direct contact RCLs. Areas outside existing buildings currently have engineered barriers to protect against direct contact or surface water infiltration. Planned redevelopment of the site will result in contaminated soils needing management and engineered barriers needing replacement or upgrade to residential standards.

Groundwater Quality Risks

Key findings of the site investigation related to groundwater quality include:

 Dissolved RCRA metals consisting of Arsenic, Barium, Cadmium, Chromium, Lead, and Mercury were detected in TW-3 exceeding their respective PAL and/or ES. It is likely that the RCRA Metals were part of the same historic release.

There is no evidence that groundwater contamination is expanding based on the Phase II Environmental Site Assessment. Groundwater with residual contamination is expected to naturally attenuate.



Vapor Intrusion Risks

The findings from the sub-slab vapor sampling activities are described as follows:

- Contamination related to chlorinated solvents consisting of TCE, Vinyl Chloride, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,4-Dichlorobenzene, and/or Benzyl Chloride exceeds Residential VRSLs and/or Large Industrial / Commercial Building VRSLs below much of the building.
- TCE is the most widespread contaminant of concern under the building and is associated with past industrial uses of the facility.
- Petroleum VRSL exceedances are located in the northeast portion of the building and are associated with the previously closed Leaking Underground Storage Tank case.

Based on the Sub-Slab Vapor Investigation, it was determined that a vapor mitigation system would be required for the facility in addition to construction and maintenance of engineered barriers.

Remedial Action Plan

The following recommendations are made for the Remedial Action Plan associated with the Post-Closure Modification

Excavation and Disposal of Contaminated Soils

The central lot will require regrading and a ramp will be constructed to allow automobiles to access the underground parking garage. The ramp will be excavated up to 10 feet below existing ground surface. Utilities and sub-slab soil vapor extraction collection systems will be excavated within the building footprint. Approximately 6,515 cubic yards (12,000 tons) of soils will be generated during the construction of the project. It is recommended that all soils, except for uncontaminated base course, be disposed of as Special Waste. Following regrading, an asphalt parking lot, concrete ramp, and concrete walks will be constructed which will replace the existing engineered barrier.

Nine confirmatory samples will be collected from the bottom of the excavated area and tests for VOCs and PAHs to document residual contamination in the central courtyard and ramp down.

Engineered Barriers – Constructions and Reconstruction

Engineered barriers that will be implemented at this site to minimize direct contact and infiltration of groundwater include:

- The existing building;
- Asphalt parking and driveways;
- Concrete sidewalks, and patios;
- A geotextile covered with 1.5 feet of clean fill and 0.5 feet of topsoil and vegetation in landscaped and grassy areas;

Groundwater Management During Construction

Groundwater is not anticipated to be encountered during construction. However, if groundwater is encountered, it will be discharged to the combined sewer under a Notice of Intent to discharge to the Milwaukee Metropolitan Sewerage District.



Vapor Intrusion Mitigation

Active soil vapor extraction and sub-slab depressurization will be utilized for the existing building. The sub-slab depressurization / soil vapor extraction system will consist of three (3) 6-inch diameter extraction points and four (4) extraction trenches containing 4-inch diameter slotted SDR 35 piping are proposed for the soil vapor extraction / sub-slab depressurization system. In addition, the garage will be ventilated via the installation of five (5) sidewall ventilation fans, each capable of 7,100 CFM. Following construction of the vapor mitigation systems, commissioning will be performed in accordance with WDNR Publication RR-800.

Documentation and Maintenance Plans

Following completion of construction of the engineered barriers and commissioning of the vapor mitigation systems, a Remedial Action Documentation Report will be submitted for the project. Maintenance plans for the engineered barriers and vapor mitigation systems will be submitted as part of the Post-Closure Modification Process with the Remedial Action Documentation Report. Regular inspection and maintenance will be part of Continuing Obligations for the engineered barriers and soil vapor extraction / vapor mitigation systems and will continue indefinitely into the foreseeable future.



SECTION I. BACKGROUND INFORMATION

1.1 Introduction

On behalf of the Community Within the Corridor Limited Partnership, K. Singh & Associates, Inc. (KSingh) was retained to update the Post-Closure Modification Request and Remedial Action Plan (RAP) for the property located at 2748 North 32nd Street, City of Milwaukee, Milwaukee County, Wisconsin.

This report describes the plan for the remediation of the environment to comply with state and federal laws to the extent practicable. The preferred remedial action considers the site and contaminant characteristics, surrounding environment, cleanup goals, and costs. The RAP has been developed in accordance with Wisconsin Department of Natural Resources (WDNR) Administrative Code NR 722, Standards for Selecting Remedial Actions.

1.2 Site Description and Location

The Community Within the Corridor Limited Partnership has purchased the property located at 2748 N 32nd Street and has initiated detailed planning and engineering for a mixed residential, retail, and commercial facility, known as the Community Within the Corridor. The East Block property, located at 2748 N 32nd Street, is 4.16 acres in size (1). The existing property and building is a former Briggs and Stratton manufacturing facility. A collection of interconnecting buildings cover the industrial property covering over 300,000 square feet. A topographic map of the project area is depicted as Figure 1. A site layout / aerial of the site is shown on Figure 2.

The subject property is described as:

Address: 2748 N 32nd Street, City of Milwaukee, WI 53208

Location: Southwest 1/4 of the Northeast 1/4 of Section 13, Township 7 North, Range 22 East

WTM91 Coordinates: X Coordinate: 686613 Y Coordinate: 290511

Latitude: 43.0690139 Longitude: -87.9536164

Parcel Number: 3091206000

The overall topography of the site area slopes to the west and the south towards 32nd Street and West Center Street. Elevation at the project site ranges between 686 and 673 feet mean seal level (MSL). Surface water collects in storm sewers on and surrounding the site and also infiltrates the grassy areas in the eastern and southern portions of the site. Groundwater flows to the southeast based on groundwater monitoring data collected during the site investigation.

1.3 Proposed Project Plans

The Community Within the Corridor Limited Partnership is proposing to redevelop the property into a mix of affordable housing, commercial spaces, and other amenities. The proposed development includes the following: The Corridor Lofts (64 Units), Creme City Lofts (36 Units) & 30 Square Townhomes (6 Units) and the Briggs Apartment Homes (91 Units) and a Community Service Facility which will include early childhood education, Science, Technology, Engineering, Art & Math after school programming, a health club (Basketball, Volleyball & Futsal, Skatepark), laundromat and a petite grocery store. The property has been



rezoned Industrial Mix to facilitate development of the project. Conceptual plans for the development are included in Appendix A.

No demolition of existing buildings is planned. The building interiors will be renovated and reconfigured. A ramp will be constructed to utilize the basement as a parking garage. Paved areas will be milled and paved or have pavement removed, be regraded, and then restored with asphalt.

Properties to the west at 3212 W Center Street, 2727 N 32nd Street, and 2758 N 33rd Street will also be part of the development, identified as the West Block, but do not require a Post-Closure Modification.

1.4 Property Owner and Responsible Party Information

Property contact information and the requester of the Post Closure Modification is as follows:

Roers Companies Attn: Mr. Shane LaFave 110 Cheshire Lane, Suite 120 Minnetonka, MN 55305 Office: (763) 285-8795 Cell Phone: (763) 300-1861 shane@roerscompanies.com

1.5 Consultant Information

The project manager for the site investigation is:

Mr. Robert Reineke, P.E. K. Singh & Associates, Inc. 3636 North 124th Street, Wauwatosa, WI 53222 (262) 821-1171 ext. 111 rreineke@ksinghengineering.com

1.6 Regulatory Status of Site

The Site is regulated under the NR 700 Wisconsin Administrative Code (WAC) for the investigation and remediation of environmental contamination.

The WDNR was notified of a release on the property on January 11, 2002 on behalf of the Wisconsin Industries Pension Plan and Trust. Soil, groundwater, and indoor air were investigated before Case Closure was granted (2). According to the WDNR's August 26, 2018 Final Case Closure letter, several continuing obligations were noted for the site. The closure conditions that will need to be addressed during and after redevelopment include:

- Structural Impediments and Residual Soil Contamination
 - Structural impediments existing at the time of cleanup, consisting of the building, courtyard, asphalt/concrete paved parking lots and driveways, made complete remediation of the soil contamination on this property impracticable. Pursuant to s.



292.12(2)(b), Wis. Stats., if the structural impediments on this property that are described above are removed, the property owner shall conduct an investigation of the degree and extent of chlorinated solvent contamination. If contamination is found at that time, the Wisconsin Department of Natural Resources shall be immediately notified and the contamination shall be properly remediated in accordance with applicable statutes and rules. If soil in the specific locations described above is excavated, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner at the time of excavation will need to determine whether the material would be considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable statutes and rules. In addition, all current and future owners and occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken during excavation activities to prevent a health threat to humans.

Engineered Cap

- Pursuant to s. 292.12(2)(a), Wis. Stats., the existing buildings and the asphalt/concrete paved parking lots and driveways that currently exists shall be maintained in compliance with the attached maintenance plan in order to minimize the infiltration of water and prevent additional groundwater contamination that would violate the groundwater quality standards in ch. N R 140, Wis. Adm. Code, and to prevent direct contact with residual soil contamination that might otherwise pose a threat to human health. If soil in the specific locations described above is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner at the time of excavation will need to determine whether the material would be considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with-applicable statutes and rules. In addition, all current and future owners arid occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken during excavation activities to prevent a health threat to humans.
- The following activities are prohibited on any portion of the property where pavement, a building foundation, soil cover, engineered cap or other barrier is required as shown on the attached map, unless prior written approval has been obtained from the Wisconsin Department of Natural Resources: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; or 6) construction or placement of a building or other structure.

Sub-Slab Depressurization

A sub-slab depressurization system was installed to vent potential volatile organic vapor intrusion that is associated with residually impacted soils beneath portions of the building. Two depressurization points were installed and are referred to as the East Side and West Side systems, respectively. Depending on site conditions, construction over contaminated materials may result in vapor migration into enclosed structures or migration along newly placed underground utility lines. The potential for vapor inhalation and mitigation should be evaluated when planning any future redevelopment, or redevelopment of the basement area where the venting system has



been installed. Measures should be taken to ensure the continued protection of public health, safety, welfare and the environment at the site.

As part of the sale of the property and to comply with Continuing Obligations for the redevelopment of the property, several additional environmental investigations have been conducted. A Phase I Environmental Site Assessment (ESA) was prepared for the development on March 10, 2020 (3). Recognized Environmental Conditions (REC) were noted based on past industrial uses of the properties and surrounding properties.

A Post Closure Modification Request was submitted to WDNR on July 8, 2020 for development of the site into a mixed use residential / commercial property. The Post Closure Modification Request is currently in the review process with the WDNR.

1.7 Geologic and Hydrogeologic Characteristics

Geologic and hydrogeologic characteristics of the site were identified in KSingh's Phase II Environmental Site Assessment dated May 24, 2020 (4).

The subject site properties geology generally consists of 4 feet of a fill material below ground surface. 2 to 6 feet of brown clay with some gravel and some sand at 10 feet below ground surface. 7 to 11 feet of gray silty clay with some gravel and little sand at 21 feet below ground surface. 2 feet of silty sand at 23 below ground surface, 4 feet of gray silty clay with gravel and cobbles at 27 feet below ground surface, and 2 feet of weathered dolomite at 32 feet below ground surface. Groundwater flow at the subject property is to the south / southeast.

1.8 Summary of Nature and Extent of Contamination

Based on the Phase I ESA, a Phase II ESA investigation was performed in April 2020 consisting of 12 soil borings with four temporary wells.

In June 2020, an investigation was performed to analyze the sub-slab depressurization system and the present of contaminants in sub-slab vapors and indoor air. Two sub-slab vapor pins were installed for the purpose of collecting sub-slab vapor samples. Following indoor air and sub-slab vapor sampling, a series of test points were installed to determine the radius of influence of the existing sub-slab depressurization system.

The findings of the investigation found that indoor air complied with Vapor Action Levels for residential properties. In addition, the west area, which is proposed to be developed into an underground parking garage, had sub-slab vapors which complied with all Vapor Risk Screening Levels (VRSLs) for residential properties. The east area, which is proposed to be developed into storage, had sub-slab vapor concentrations for 1,1-Dichloroethane, 1,2,4-Trimethylbenzene, and Trichloroethene (TCE) exceeding residential VRSLs (5).

Based on the findings of the sub-slab vapor investigation, a Post Closure Modification request was prepared (6). The Post Closure Modification request recommended repairs to the east area sub-slab depressurization system so that it could be maintained in operation. In addition, it was recommended to be submitted for the west area to be converted to utilize the air exchange system of the parking garage as a modified continuing obligation.



The WNDR requested a full vapor investigation of the facility during a conference call with CWC and KSingh on October 26, 2020. KSingh submitted a Site Investigation Work Plan on November 3, 2020, consisting of 51 sub-slab vapor (SSV) probes, and approved by the WDNR on December 2, 2020. KSingh had questions to the approval which were addressed by the WDNR with the following comments on December 11, 2020:

- Proposed SSV probes SS-4, SS-19, SS-25, and SS-37 may be moved closer to the nearest elevator pits.
- An assessment shall be conducted to determine whether utilities are acting as preferential mitigation pathways at the site. Locations of utilities in relation to known areas of contamination should be considered when conducting this assessment. The utility assessment may need to identify the need for additional sampling locations. A figure indicating locations of all underground utilities should be provided with the investigation report.
- Passive air sampling in each of the site's four elevator pits is recommended to be performed. Passive air sampling may be performed after the results of the SSV sampling is known.
- It is understood construction activities within the building may facilitate abandonment of any SSV probe locations after installation. The WDNR recommends a minimum of one additional round of sampling after reconstruction is completed, any HVAC systems are installed and operating, and the building is under standard operating conditions. Less obtrusive vapor probe locations will be considered prior to additional sampling.

The results of Sub-Slab Vapor Sampling were submitted to the WDNR in a report dated January 8, 2021 (7). The following conclusions were arrived at following the sub-slab vapor investigation.

- Chlorinated solvents, Cyclohexane, Hexane, and petroleum constituents were detected under the existing building at concentrations exceeding Residential Vapor Risk Screening Levels (VRSLs) and/or Large Commercial / Industrial Building VRSLs.
- TCE is the most widespread contaminant of concern and is associated with past industrial uses
 of the facility.
- There is no pattern suggesting that existing underground utilities are acting as preferential migratory pathways.
- Petroleum sub-slab vapors are associated with the existing LUST release.
- Other sub-slab vapor concentrations are associated with the history of industrial operations at the facility.

Sub-slab vapor sampling points and results are shown on Figure 5.

Based on the results of the SSV investigation, pressure field extension testing was performed in February 2021. The results of the pressure field extension testing and a design of a vapor mitigation system were submitted to the WDNR in a report dated March 2, 2021 (8).

1.8.1 Soil Quality

Soil samples were collected and tested for VOCs, SVOCs, RCRA metals, PCBs, pesticides, and herbicides. Two areas of contamination were detected on the subject property.

North Parking Lot and Central Lot

VOCs consisting of 1,1,1-trichloroethene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, cis-1,2-dichloroethene, ethylbenzene, methylene chloride, naphthalene, PCE, TCE, and total xylenes are present in



borings B-7 to B-9 at concentrations exceeding the groundwater protection Residual Contaminant Levels (RCLs) and/or non-industrial direct contact RCLs. Soil contamination is consistent with historic results.

PAHs consisting of benzo[a]pyrene, benzo[b]fluoranthene, chrysene, dibenz(a,h)anthracene, and naphthalene were detected in borings B-7, B-8, and B-9 exceeding the groundwater protection RCLs and/or non-industrial direct contact RCLs. There are no historic results for comparison, but the extents appear to coincide with the historic release.

RCRA Metals Arsenic and Lead were detected greater than their background threshold values and/or groundwater protection RCLs established groundwater protection, non-industrial direct contact, and industrial direct contact RCLs.

VOCs consisting of 1,1-dichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, cis-1,2-dichloroethene, ethylbenzene, naphthalene, and total xylenes and the SVOC Naphthalene were detected in TW-3 exceeding the PALs and/or ESs established in NR 141.10. Results appear to be of the same order of magnitude as historic VOCs results from that location.

Dissolved RCRA metals consisting of Arsenic, Barium, Cadmium, Chromium, Lead, and Mercury were detected in TW-3 exceeding their respective PAL and/or ES. It is likely that the RCRA Metals were part of the same historic release.

East Area Adjacent to the Railroad

Based on results from soil boring B-11, the VOC Naphthalene and PAHs Benzo(a)pyrene, Benzo(b)fluoranthene, and Chrysene are present exceeding groundwater protection RCLs and/or nonindustrial direct contact protection RCLs. The RCRA Metals Arsenic and Lead were detected exceeding groundwater protection, non-industrial direct contact protection, and/or industrial direct contact protection RCLs.

Based on the findings of the Phase II ESA, contamination in the vicinity of soil borings B-7, B-8, and B-9 (North Parking Lot and Central Lot) appears to be consistent with the previously investigated release associated with BRRTS # 02-41-263675. PAHs and metals were detected in addition to VOCs in the vicinity, but the extent appears to be limited and can be managed through the same Continuing Obligations.

Soil boring B-11 (East Area Adjacent to the Railroad) contains the VOC Naphthalene, the PAHs Benzo(a)pyrene, Benzo(b)fluoranthene, and Chrysene, and the RCRA Metals Arsenic and Lead at concentrations exceeding RCLs. Based on data from B-10 and historic data in the area, specifically from historic borings GTS-27 to GTS-30, it is likely the contamination is associated with the adjacent railroad and is limited in extent. Due to the historic closed site and the limited extent of contamination detected by the railroad, it is recommended that no further action regarding site investigations be performed.

Soil quality test results are summarized in Table 1. Current and historic soil contamination is shown on Figure 3.

Near surface soils throughout much of the site exceed groundwater protection or direct contact RCLs. Areas outside existing buildings currently have engineered barriers to protect against direct contact or surface water infiltration. Planned redevelopment of the site will result in contaminated soils needing management and engineered barriers needing replacement or upgrade to residential standards.



1.8.2 Groundwater Quality

During the Phase II ESA, temporary wells were also constructed in soil borings B-5, B-7, B-8, and B-9 to assist with grab-groundwater sample collection. Groundwater quality test results are summarized in Table 2. Groundwater contamination is shown on Figure 4.

Key findings of the site investigation related to groundwater quality include:

- Dissolved RCRA metals consisting of Arsenic, Barium, Cadmium, Chromium, Lead, and Mercury were detected in TW-3 exceeding their respective PAL and/or ES. It is likely that the RCRA Metals were part of the same historic release.
- There is no evidence that groundwater contamination is expanding based on the Phase II ESA.

1.8.3 Vapor Quality

The findings from the SSV sampling activities are described as follows:

- Contamination related to chlorinated solvents consisting of TCE, Vinyl Chloride, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,4-Dichlorobenzene, and/or Benzyl Chloride exceeds Residential VRSLs in vapor points SS-1, SS-2, SS-3, SS-5, SS-6, SS-7, SS-10, SS-14, SS-18, SS-20, SS-23, SS-25, SS-26, SS-27, SS-28, SS-33, SS-34, SS-35, SS-36, SS-37, SS-38, SS-39, SS-42, SS-45, SS-45, SS-49, and SS-51.
- Contamination related to chlorinated solvents consisting of TCE, 1,1-Dichloroethane, and/or Benzyl Chloride exceeds Large Industrial / Commercial Building VRSLs in vapor points SS-2, SS-5, SS-18, SS-20, SS-25, SS-26, SS-27, SS-35, SS-36, and SS-41.
- Contamination related to Cyclohexane and/or Hexane was detected exceeding Residential VRSLs in vapor points SS-2, SS-5, SS-18, SS-39, and SS-41 and Large Industrial / Commercial Building VRSLs in vapor points SS-5 and SS-39.
- TCE is the most widespread contaminant of concern under the building and is associated with past industrial uses of the facility.
- Petroleum related contaminants consisting of Benzene, Ethylbenzene, Toluene, 1,2,4-Trimethylbenzene, 1,2,5-Trimethylbenzene, and/or Xylenes were detected exceeding Residential VRSLs in vapor points SS-2, SS-3, SS-5, SS-39, SS-41, and SS-43.
- Petroleum related contaminants consisting of Benzene, 1,2,4-Trimethylbenzene, and/or m&p-Xylenes were detected exceeding Large Industrial / Commercial Building VRSLs in vapor points SS-2, SS-5, and/or SS-39.
- Petroleum VRSL exceedances are located in the northeast portion of the building and are associated with the previously closed Leaking Underground Storage Tank case.

Results of the SSV sampling are summarized in Table 3. Isoconcentration plumes for Residential and Large Commercial / Industrial Building VRSL exceedances of TCE, the main contaminant of concern, are shown on Figure 5.



SECTION II. SELECTED REMEDIAL ACTION

The cleanup goal for the site is to perform remediation: 1) sufficient to obtain approval of a Post-Closure Modification from the WDNR in a reasonable time and 2) ensure that the remediation approach is consistent with the development goals of the site. The objectives are to eliminate exposure pathways using WDNR-approved remedial actions that are economical and achieve the goal of redevelopment. It is anticipated the redevelopment plan will not require demolition of the existing building. Our proposed remedial action plan consists of the following items:

2.1 Soil Remediation

Contamination in soils constitute direct contact, groundwater protection, and vapor intrusion risks. The direct contact risks will be managed via excavation and disposal of contaminated soils and construction of engineered barriers.

2.1.1 Excavation and Disposal of Contaminated Soils

Soil excavation is planned for grading and to construct a ramp to access the basement of the existing structure for use as an underground parking lot as well as for utilities and structural work. The areas of excavation are shown on Figures 6A and 6B.

The central lot will require regrading and a ramp will be constructed to allow automobiles to access the underground parking garage. The ramp will be excavated up to 10 feet below existing ground surface. Utilities and sub-slab soil vapor extraction collection systems will be excavated within the building footprint. Approximately 6,515 cubic yards (12,000 tons) of soils will be generated during the construction of the project, as confirmed by the contractor, Greenfire Management Services, LLC. It is recommended that all soils, except for uncontaminated base course, be disposed of as Special Waste. Following regrading, an asphalt parking lot, concrete ramp, and concrete walks will be constructed which will replace the existing engineered barrier. The area where engineered barriers will be replaced is shown on Figure 7.

Nine confirmatory samples will be collected from the bottom of the excavated area and tests for VOCs and PAHs to document residual contamination in the central courtyard and ramp down. Test results will

No contaminated soils from the site are proposed to be reused. No soils are proposed to be exposed for direct contact. Annual inspections will be performed on the Engineered Barriers as part of a maintenance plan for the facility. An updated Maintenance Plan and documentation of the Engineered Barrier construction will be submitted at the conclusion of construction for WDNR approval. Details of the parking lot and concrete are shown on Figure 8.

2.1.2 Engineered Barriers / Continuing Obligations

An engineered barrier limits direct contact exposure and/or controls migration of contaminants. These barriers may consist of buildings, pavement, soil covers, flexible vapor barriers, etc. As part of the proposed design and as a condition of site closure, a cover will be necessary over the residual soil impacts at the site. Engineered barriers that will be implemented at this site to minimize direct contact and infiltration of groundwater include:



- The existing building;
- Asphalt parking and driveways;
- Concrete sidewalks, and patios;
- A geotextile covered with 1.5 feet of clean fill and 0.5 feet of topsoil and vegetation in landscaped and grassy areas;

The location of proposed engineered barriers are shown on Figure 7. Details of the engineered barriers are shown on Figure 8.

When the project work is complete, documentation of the construction of the engineered barriers will be documented in a Remedial Action Documentation Report. A maintenance plan for the engineered barriers will be submitted with the Remedial Action Documentation Report.

2.2 Groundwater Remediation

Natural attenuation is the approved alternative for this site. The constituents of concern are degradable, the plume is delineated and is stable or declining, drinking water is supplied from Lake Michigan, and the concentration and toxicity of the contaminants are enough to attenuate naturally. Additional investigation of areas inside the building may be useful, but are not anticipated to affect the remedial strategy. The presence of clay soils make groundwater recovery impractical.

2.2.1 Groundwater Management During Construction

Based on the Case Closure Packet, residual groundwater contamination is located on the site. Groundwater is not anticipated to be encountered during construction. However, if groundwater is encountered, it will be discharged to the combined sewer under a Notice of Intent to discharge to the Milwaukee Metropolitan Sewerage District.

2.3 Vapor Remediation and Vapor Mitigation Approach

The presence of VOCs in the subsurface beneath the existing building present vapor intrusion risks that will need to be managed and remediated. Soil vapor extraction will be utilized to remediate the subsurface and to function as a sub-slab depressurization system. The vapor mitigation system has been designed to turn over 4 pore volumes of sub-slab air per day. Excavation and removal of source soils is not viable due to the structural impediment presented by the building. Any excavation and disposal cannot remove all the soils that represent a vapor risk and will still require a sub-slab vapor mitigation system. Injection treatment is not viable due to clay soils beneath the building slab preventing migration of injected materials beyond the immediate vicinity of the injection point. The WDNR has provided verbal guidance indicating that strategies other than sub-slab depressurization will not be approved. Therefore, soil vapor extraction of chlorinated hydrocarbons is the only viable approach which will require a high vacuum system of a minimum 44-inches of water column to overcome limited permeability of the sub-slab soils.

KSingh has calculated 1,250 days (3.5 years) for 5,000 pore volumes to be treated by the proposed system which is a suggested benchmark by the US Army Corps of Engineers. The 4 pore volumes per day goal is double what was proposed for the Madison-Kipp Corporation site (BRRTS No. 0213001569) and would be considered active remediation rather than merely vapor intrusion mitigation.



Soil vapor extraction / sub-slab depressurization will be the principal means of managing vapor intrusion risks for the existing building. Garage ventilation will also be utilized for the underground garage area. Additional investigation and vapor sampling will be necessary to monitor the effectiveness of the approaches.

The soil vapor extraction / vapor mitigation plan is depicted on Figure 9 and Figure 10. Details of the soil vapor extraction / vapor mitigation system are shown on Figure 11.

2.3.1 Vapor System for Existing Building

Active soil vapor extraction and sub-slab depressurization will be utilized for the existing building. The sub-slab depressurization / soil vapor extraction system will consist of three (3) 6-inch diameter extraction points and four (4) extraction trenches containing 4-inch diameter slotted SDR 35 piping are proposed for the soil vapor extraction / sub-slab depressurization system.

The sub-slab fill material will be removed from each pit and trench to approximately 18 inches below bottom of slab to create a pit. Removed sub-slab materials will be removed from the building and stockpiled for disposal at a landfill. Each pit and trench will be backfilled with 3/8" washed pea gravel or granular fill to bottom of slab elevation.

The vertical extraction points will require trenching and installation of piping laterals from the extraction pits to the nearest column or wall to construct the vertical extraction risers adjacent to columns for minimal interference with future floor plans. Proposed vertical extraction pits are generally located approximately 5 to 10 feet away from columns, rather than placing pits immediately adjacent to columns/footers, for optimal spacing to maximize the radius of vacuum influence for each pit. Placing the extraction pits immediately adjacent to columns/footers would require additional extraction points to achieve vacuum coverage across the slabs, and thereby increase the number and/or sizes of blowers/fans required.

Since trenching and installation of sub slab piping is necessary, the proposed vertical extraction pits may be saw-cut 18 inches square and excavated by hand or using a mini-backhoe to 18-inch depth rather than installation using a concrete coring rig. Excavated surficial soils will be removed from the facility and containerized for future disposal at a landfill. Each suction pit will be backfilled with 3/8-inch washed pea gravel to the bottom of the slab elevation. A 6-inch SDR 35 PVC pipe will be set within the approximate top 6-inches in each pit and extended up through the sub-slab.

The vertical extraction points may require trenching and installation of piping laterals from the extraction pits to the nearest column to construct the vertical extraction risers adjacent to columns or walls for minimal interference with future floor plans. Proposed vertical extraction pits are generally located approximately 5 to 10 feet away from columns and walls, rather than placing pits immediately adjacent to columns/footers, for optimal spacing to maximize the radius of vacuum influence for each pit. Placing the extraction pits immediately adjacent to columns/footings would require additional extraction points to achieve vacuum coverage across the slabs, and thereby increase the number and/or sizes of blowers/fans required.

10-mil poly will be installed above the pea gravel pit prior to concrete placement. Concrete will be poured down to top of footing elevation along the piping trench, encasing the galvanized steel pipe lateral to maintain the integrity of the slab. The extraction pipes will be sealed at top of floor slab using Sikaflex 1A construction sealant, or equivalent.



The garage will be ventilated via the installation of five (5) sidewall ventilation fans, each capable of 7,100 cubic feet per minute. Ventilation calculations are included in the letter submitted to WDNR on September 15, 2020.

Blower sizes were estimated in the Feasibility Study and Design Report (8). Prior to commencement of operations, a pilot scale test will be conducted after the vapor collection piping is installed. During pilot scale testing, at least two exhaust air samples will be collected from each exhaust point via Summa canisters and tested for VOCs. The testing will be used to determine the need for an air permit and emissions control technology. Monthly exhaust air sampling or installation of a dedicated real time PID is anticipated for monitoring exhaust during operation.

Following construction of the soil vapor extraction / vapor mitigation systems, commissioning will be performed in accordance with WDNR Publication RR-800 (9). Three rounds of commissioning measurements are proposed to document that the system is functioning properly. Each round of commissioning of the subslab depressurization system will include pressure field extension measurements using a micromanometer, vacuum measurements on each extraction point system, and visual inspection of the facility and equipment for cracks and equipment defects. Modifications to the systems will be performed, as necessary, based on the results of the commissioning process. The results of commissioning and a maintenance plan will be submitted to WDNR in a Remedial Action Documentation report at the conclusion of the commissioning process. Regular inspection and maintenance of the system will be part of Continuing Obligations for the sub-slab vapor mitigation system.

2.4 Sustainable Remedial Action - NR 722.09

"The U.S. Environmental Protection Agency (EPA) defines Green Remediation as the practice of considering all environmental effects of remedy implementation and incorporating options to minimize the environmental footprint of cleanup actions."

Green Remediation focuses on maximizing the net environmental benefit of cleanup, while preserving the effectiveness of the selected remedy, for the protection of human health and the environment. The following six core elements of green remediation have been established by the US EPA:

- Minimize total energy use and maximum use of renewable energy
- Minimize air pollutants and greenhouse gas emissions
- Minimize water use and impacts to water resources
- Optimize future land use and enhance ecosystem
- Reduce, reuse, and recycle materials and waste
- Optimize sustainable management practices during stewardship

In general, these green remediation core elements have been established to reduce the demand placed on the environment during cleanup actions and evaluate the net environmental impact of remediation. Sustainable development meets the needs of the present without compromising the needs of future generations. Green remediation objectives include:

- Achieve remedial action goals
- Support use and reuse of remediated parcels
- Increase operational efficiencies
- Reduce total pollutant and waste burdens on the environment



- Minimize degradation and enhance ecology of the site and other affected areas
- Reduce air emissions and greenhouse gas production
- Minimize impacts to water quality and water cycles
- Conserve natural resources
- Achieve greater long-term financial return from investments
- Increase sustainability of site cleanups

The active soil vapor extraction / sub-slab depressurization system combined with natural attenuation of groundwater contamination will optimize achievement of sustainable goals as options that involve more intrusive excavation and demolition are not feasible.

2.5 Proposed Schedule

The proposed schedule for implementation of remedial actions for Post-Closure Modification is as follows:

Begin asbestos abatement and select demolition February 2021 Begin Installation of Vapor Mitigation Systems March 2021 **Pilot Scale Testing** June / July 2021 Commencement of Operations and Maintenance August 2021 Commissioning Measurements (1st Round) August 2021 Commissioning Measurements (2nd Round) December 2021 Commissioning Measurements (3rd Round) March 2022 Submittal of Remedial Action Documentation Report April 2022 August 2022 Annual O&M Report Annual O&M Report August 2023 Annual O&M Report August 2024 Sub-Slab Vapor Sampling for Decommissioning February 2025 Post-Closure Modification / Case Closure Request March 2025



SECTION III. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

The Community Within the Corridor Limited Partnership has purchased the property located at 2748 N 32nd Street and has initiated detailed planning and engineering for a mixed residential, retail, and commercial facility, known as the Community Within the Corridor. The East Block property, located at 2748 N 32nd Street, is 4.16 acres in size. The existing property and building is a former Briggs and Stratton manufacturing facility.

The Community Within the Corridor Limited Partnership is proposing to redevelop the property into a mix of affordable housing, commercial spaces, and other amenities. The proposed development includes the following: The Corridor Lofts (64 Units), Creme City Lofts (36 Units) & 30 Square Townhomes (6 Units) and the Briggs Apartment Homes (91 Units) and a Community Service Facility which will include early childhood education, Science, Technology, Engineering, Art & Math after school programming, a health club (Basketball, Volleyball & Futsal, Skatepark), laundromat and a petite grocery store. The property has been rezoned Industrial Mix to facilitate development of the project.

No demolition of existing buildings is planned. The building interiors will be renovated and reconfigured. A ramp will be constructed to utilize the basement as a parking garage. Paved areas will be milled and paved or have pavement removed, be regraded, and then restored with asphalt.

The property was previously investigated and granted Case Closure with continuing obligations as an industrial property under BRRTS # 02-41-263675. KSingh was retained to perform environmental consulting services for the redevelopment of the property. Following a Phase I Environmental Site Assessment, a Phase II Environmental Site Assessment, and Sub-Slab Vapor Sampling, a Post-Closure Modification Request was submitted to the WDNR on July 8, 2020. Following submission of the Post-Closure Modification Request, KSingh performed a Sub-Slab Vapor Investigation of the building.

Near surface soils throughout much of the site exceed groundwater protection or direct contact RCLs. Areas outside existing buildings currently have engineered barriers to protect against direct contact or surface water infiltration. Planned redevelopment of the site will result in contaminated soils needing management and engineered barriers needing replacement or upgrade to residential standards.

Key findings of the site investigation related to groundwater quality include:

- Dissolved RCRA metals consisting of Arsenic, Barium, Cadmium, Chromium, Lead, and Mercury were detected in TW-3 exceeding their respective PAL and/or ES. It is likely that the RCRA Metals were part of the same historic release.
- There is no evidence that groundwater contamination is expanding based on the Phase II ESA.

The findings from the SSV sampling activities are described as follows:

- Contamination related to chlorinated solvents consisting of TCE, Vinyl Chloride, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,4-Dichlorobenzene, and/or Benzyl Chloride exceeds Residential VRSLs and/or Large Industrial / Commercial Building VRSLs below much of the building.
- TCE is the most widespread contaminant of concern under the building and is associated with past industrial uses of the facility.



 Petroleum VRSL exceedances are located in the northeast portion of the building and are associated with the previously closed Leaking Underground Storage Tank case.

Based on the Sub-Slab Vapor Investigation, it was determined that a vapor mitigation system would be required for the facility in addition to construction and maintenance of engineered barriers.

3.2 Recommendations

The following recommendations are made for the Remedial Action Plan associated with the Post-Closure Modification.

Excavation and Disposal of Contaminated Soils

The central lot will require regrading and a ramp will be constructed to allow automobiles to access the underground parking garage. The ramp will be excavated up to 10 feet below existing ground surface. In addition, various utilities will be constructed below the basement slab. Approximately 6,515 cubic yards (12,000 tons) of soils will be generated during the construction of the project, from the ramp and utilities, as confirmed by the contractor, Greenfire Management Services, LLC. It is recommended that all soils, except for uncontaminated base course, be disposed of as Special Waste. Following regrading, an asphalt parking lot, concrete ramp, and concrete walks will be constructed which will replace the existing engineered barrier.

Nine confirmatory samples will be collected from the bottom of the excavated area and tests for VOCs and PAHs to document residual contamination in the central courtyard and ramp down.

Engineered Barriers – Constructions and Reconstruction

Engineered barriers that will be implemented at this site to minimize direct contact and infiltration of groundwater include:

- The existing building;
- Asphalt parking and driveways;
- Concrete sidewalks, and patios;
- A geotextile covered with 1.5 feet of clean fill and 0.5 feet of topsoil and vegetation in landscaped and grassy areas;

Groundwater Management During Construction

Groundwater is not anticipated to be encountered during construction. However, if groundwater is encountered, it will be discharged to the combined sewer under a Notice of Intent to discharge to the Milwaukee Metropolitan Sewerage District.

Soil Vapor Extraction / Vapor Intrusion Mitigation

Active soil vapor extraction and sub-slab depressurization will be utilized for the existing building. The sub-slab depressurization / soil vapor extraction system will consist of three (3) 6-inch diameter extraction points and four (4) extraction trenches containing 4-inch diameter slotted SDR 35 piping are proposed for the soil vapor extraction / sub-slab depressurization system. Soils excavated for installation of the soil vapor extraction system will be disposed of as special waste. The garage will be ventilated via the installation of five (5) sidewall ventilation fans, each capable of 7,100 CFM, as an additional precaution. Following



construction of the soil vapor extraction / vapor mitigation systems, commissioning will be performed in accordance with WDNR Publication RR-800.

<u>Documentation and Maintenance Plans</u>

Following completion of construction of the engineered barriers and commissioning of the vapor mitigation systems, a Remedial Action Documentation Report will be submitted for the project. Maintenance plans for the engineered barriers and soil vapor extraction / vapor mitigation systems will be submitted as part of the Post-Closure Modification Process with the Remedial Action Documentation Report. Regular inspection and maintenance will be part of Continuing Obligations for the engineered barriers and vapor mitigation systems and will continue indefinitely into the foreseeable future.

3.3 Limitations of Data

The remedial action plan was based on conditions known to exist prior to and encountered during field exploration. The scope of work for this phase of investigation was only onsite investigation. The assessment has confirmed the existence of contamination within near-surface vapor, soils, and groundwater at the site. Additional exploratory work may be warranted along with future groundwater monitoring. In the event that the site redevelopment does not occur, an alternative remedial option, consistent with the existing land use, would be prepared for a lower cost.

The soil vapor extraction / sub-slab depressurization system will require continuing inspections and maintenance to function properly. Regular sealing of cracks will allow the system to achieve required zones of influence. Repair of roofs, roof drains, floor drains, and storm drains will prevent water from entering the sub-slab pore space. Repair of and operation of sumps and drain tiles will be necessary to minimize water interfering with the soil vapor extraction system and successful completion of remediation.

The remedial action plan for mitigating and remediating the sub-slab vapors in clayey subsoils is proposed because of structural impediments. While the proposed plan will be able to maintain negative pressure beneath the slab, its effectiveness relative to source removal will be limited.

This report has been prepared exclusively for Roers Companies and the Community Within the Corridor Limited Partnership and it may not be altered or changed in any manner without expressed written consent of K. Singh & Associates, Inc.



SECTION IV. REFERENCES

- Milwaukee County Land Information Office. http://county.milwaukee.gov/mclio/applications/interactivemapping.html
- 2. Wisconsin Department of Natural Resources Bureau of Remediation and Redevelopment Tracking System. http://dnr.wi.gov/topic/Brownfields/botw.html
- 3. Phase I Environmental Site Assessment, Community Within the Corridor, 2748 N 32nd Street, Milwaukee, Wisconsin prepared by K. Singh & Associates, Inc. dated March 10, 2020.
- 4. Phase II Environmental Site Assessment, Community Within the Corridor, 2748 N 32nd Street, Milwaukee, Wisconsin prepared by K. Singh & Associates, Inc. dated May 24, 2020.
- 5. Indoor Air and Sub-Slab Vapor Sampling, Community Within the Corridor, 2748 N 32nd Street, Milwaukee, Wisconsin prepared by K. Singh & Associates, Inc. dated July 7, 2020.
- Request for Post Closure Modification, The Community Within the Corridor Development, 2748 N 32nd Street, Milwaukee, Wisconsin prepared by K. Singh & Associates, Inc. dated July 8, 2020.
- Additional Sub-Slab Vapor Sampling Investigation for Post Closure Modification, Community Within the Corridor Development, 2748 N 32nd Street, Milwaukee, Wisconsin prepared by K. Singh & Associates, Inc. dated January 8, 2021.
- 8. Feasibility Study and Design Vapor Mitigation System, Community Within the Corridor Development, 2748 N 32nd Street, Milwaukee, Wisconsin prepared by K. Singh & Associates, Inc. dated March 11, 2021.
- 9. WDNR Publication RR-800 "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin", January 2018.



FIGURES



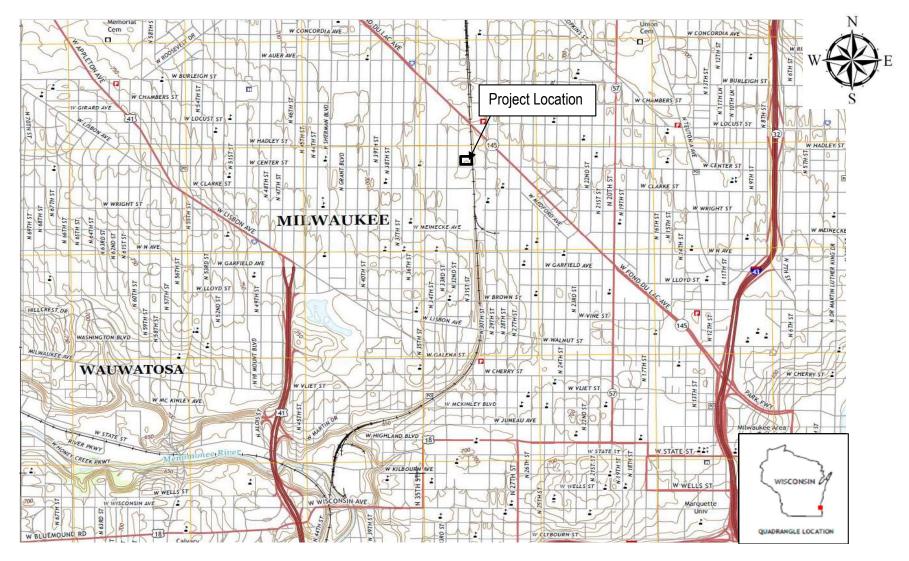
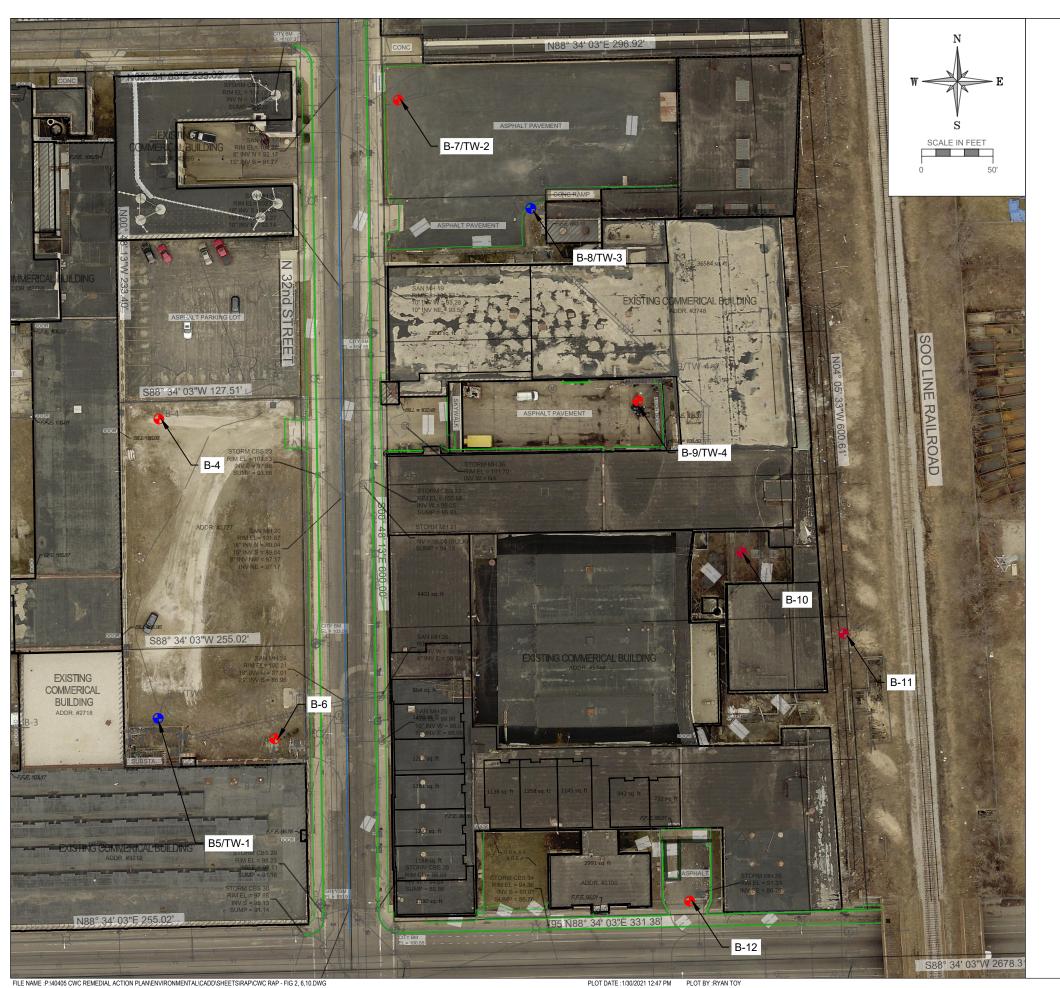


Figure 1. Topographic Map of Project Location from 2016 Milwaukee, WI 7.5-Minute Series Map Scale 1: 24,000





SOIL BORINGS AND TEMPORARY WELL LOCATIONS

VOCs, PAHs, RCRA Metals, PCBs

VOCs, PAHs, RCRA Metals

VOCs, SVOCs, RCRA Metals, PCBs, Pesticide, Herbicides

NR 720 RCL Exceedance Extents

ABBREVIATIONS:

AC. = ACRES ARC = ARC OF CURVE ASPH = ASPHALT BM = BENCHMARK

BM = BENCHMARK
CH. = CHORD LENGTH
COR = CORNER
CSM = CERTIFIED SURVEY
MAP OR MAPPING
C.T.H. = COUNTY TRUNK HIGHWAY D = DELTA
DEG = DEGREE OF CURVE
E = EAST

EL. = ELEVATION EX. = EXISTING
EXC. = EXCEPTION
FFE = FINISH FLOOR EL.

FND = FOUND

GFE = GARAGE FLOOR EL.

GND = GROUND

INV. = INVERT IP = IRON PIPE IRD = IRON ROD

MEA = MEASURED NAD = NORTH AMERICAN DATUM N = NORTH NE = NORTHEAST NO.= NUMBER NW = NORTHWEST

PG. = PAGE QTR = QUARTER
REC = RECORDED AS
RIM = RIM OR TOP POINT R/W = RIGHT OF WAY S = SOUTH
SE = SOUTHEAST
SEWRPC = SOUTHEAST WISCONSIN

C.T.H. = STATE TRUNK HIGHWAY SW = SOUTHWEST SUR = SURVEYED U.S.H. = UNITED STATES HIGHWAY
U.S.G.S.= UNITED STATES
GEOLOGICAL SURVEY

REGIONAL PLANNING

VAR = VARIES VAK = VAKIES

VPI = VERTICAL POINT OF

INTERSECTION

W = WEST

LEGEND:

SECTION CORNER MONUMENT

+ EX. CHISELED CROSS FOUND

⊗ EX. IRON ROD FOUND O EX. IRON PIPE FOUND

(ST) EX. STORM MANHOLE

EX. CATCH BASIN ROUND

EX. CATCH BASIN SQUARE

EX. SIAMESE HYDRANT

EX. GAS VALVE

EX. AIR CONDITIONER

☑ EX. TELEPHONE PEDESTAL

ĕ EX. CLEANOUT

EX. POWER POLE

EX. MONITORING WELL OR CORING

EX. MAILBOX

SS EX. SANITARY MANHOLE

U EX. UNKNOWN MANHOLE

SS EX. COMBINED SEWER MANHOLE

(E) EX. ELECTRIC MANHOLE

EX. ELECTRIC TRANSFORMER

T EX. TELEPHONE MANHOLE

—< EX. GUY WIRE</p>

X EX. LIGHT POLE

EX. SIGN

EX. BOLLARD (BOL)

⋈ EX. WATER VALVE

EX. OVERHEAD WIRES

EX. BUREAU OF ELECTRICAL SERVICES

EX. FENCE LINE

EX. COMMUNICATIONS

EX. TELEPHONE LINE

EX. GAS LINE

BES -

— COM ———

– FIB — EX. FIBER OPTICS EX. SANITARY SEWER (SAN)

EX. STORM SEWER (STO)

EX. WATER MAIN

EX. TREE LINE

UNDERGROUND COMBUSTIBLE GAS LINE



3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

CONSULTANT

CONSULTANT

COMMUNITY WITHIN THE (

COMMUNITY WITHIN THE CORRIDOR MILWAUKEE, WI PROJECT NUMBER: 40405

TITLE:

PROJECT

겅

CHECKED BY

FIGURE 2

SITE LAYOUT MAP

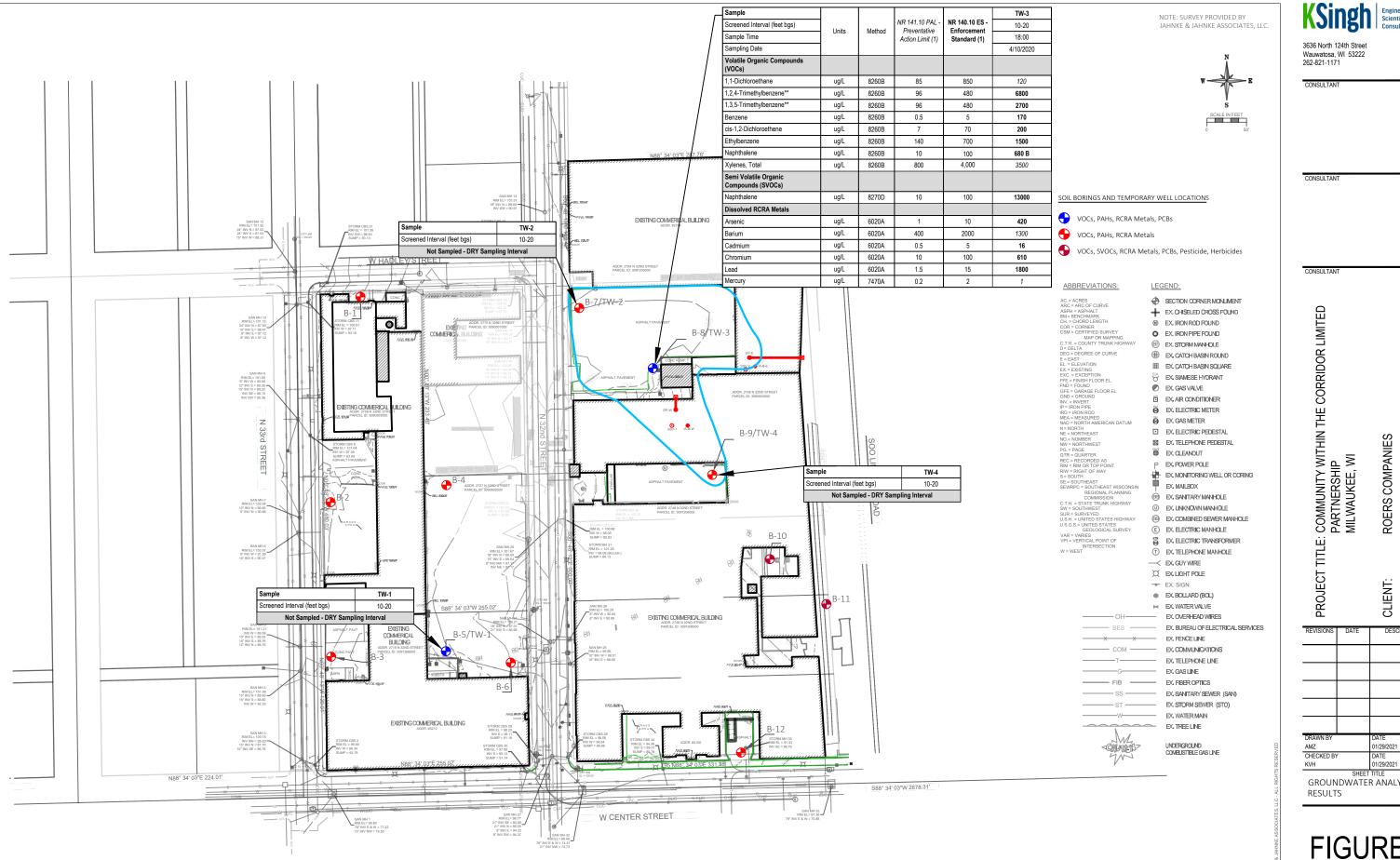


겅

CORRIDOR LIMITED

01/29/2021

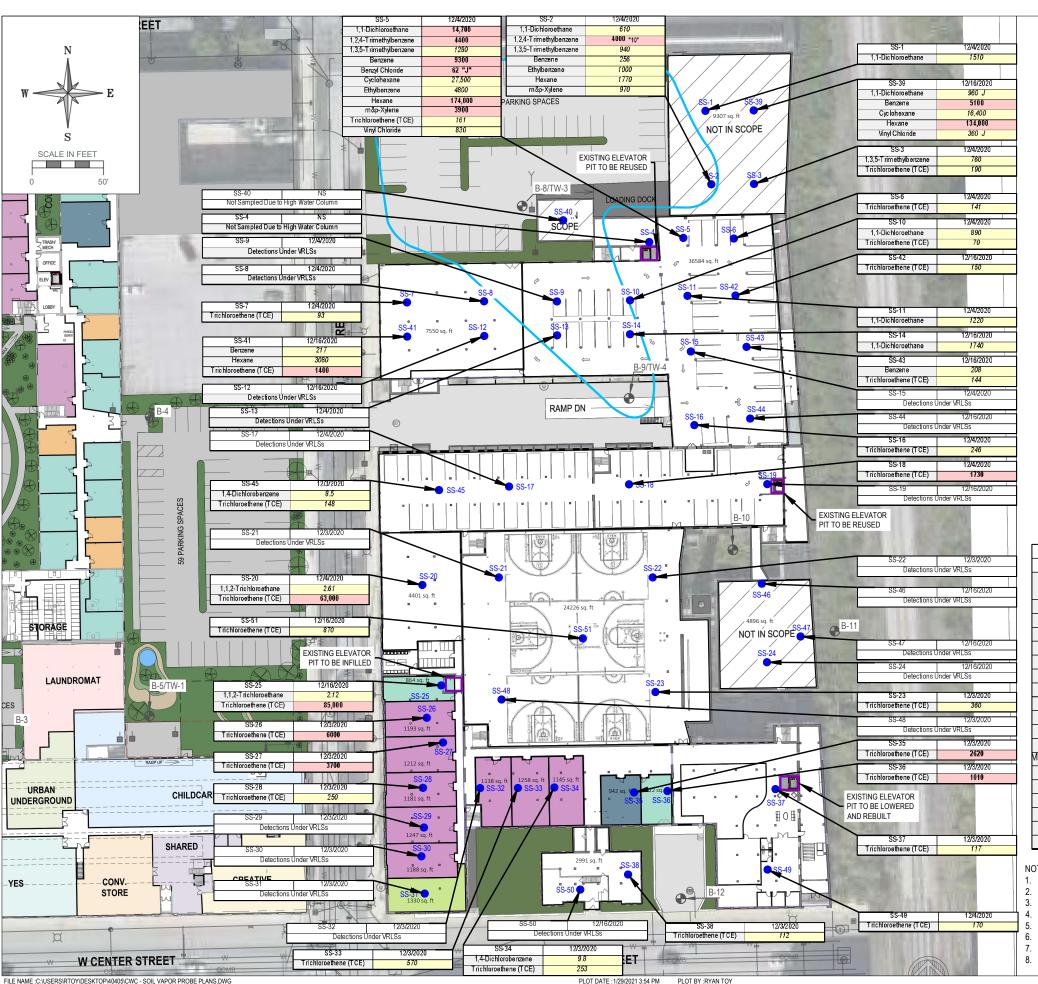
FIGURE 3



GROUNDWATER ANALYTICAL

FIGURE 4

SHEET 4



LEGEND

- Sub-Slab Sampling Locations (51)
- Previous Boring and Temporary Well Locations
- Known Elevator Shaft
- 1 Bedroom Apartment
- 2 Bedroom Apartment
- 3 Bedroom Apartment
- 4 Bedroom Apartment
- Studio Apartment
- WI Residential VRSL Exceedance Extents
- WI Large Commercial / Industrial VRSL Exceedance Extents
- Past NR 720 RCL Exceedance Extents

Sub-Slab Vapor							
Attenuation Factor	0.03	0.01					
	Residential Vapor Risk	Large Commercial /					
Analyte	Screening Level (VRSL)	Industrial VRSL					
1,1,2-Trichloroethane	0.7	8.8					
1,1-Dichloroethane	600	7700					
1,2,4-Trimethylbenzene	210	2600					
1,3,5-Trimethylbenzene	210	2600					
1,4-Dichlorobenzene	8	110					
Benzene	120	1600					
Benzyl Chloride	1.9	25					
Cyclohexane	3333	44000					
Ethylbenzene	370	4900					
Hexane	1400	18000					
m&p-Xylene	333	4400					
Methyl tert-butyl ether (MTBE	3700	47000					
Naphthalene	28	360					
o-Xylene	3300	44000					
Tetrachloroethene	1400	18000					
trans-1,2-Dichloroethene							
Trichloroethene (TCE)	70	880					
Vinyl Chloride	57	2800					

- REPORTED UNITS IN ug/m^3
- BASED ON WI VAPOR QUICK LOOKUP TABLE VAPOR RISK SCREENING LEVELS
- NS = NOT SAMPLED
- SAMPLING LOCATIONS ARE APPROXIMATE
- "J" = ANALYTE DETECTED BETWEEN 'LIMIT OF DETECTION' AND 'LIMIT OF QUANTITATION'
- "10" = LINEAR RANGE OF CALIBRATION CURVE EXCEEDED DURING ANALYSIS
- BOLD INDICATES DETECTION IS ABOVE LARGE COMMERCIAL / INDUSTRIAL VRSLS
- ITALICS INDICATES DETECTION IS ABOVE RESIDENTIAL VRSLS

Wauwatosa, WI 53222 262-821-1171

CONSULTANT

CONSULTANT

COMMUNITY WITHIN THE PARTNERSHIP COMMUNITY WITHIN MILWAUKEE, WI PROJECT NUMBER: 4

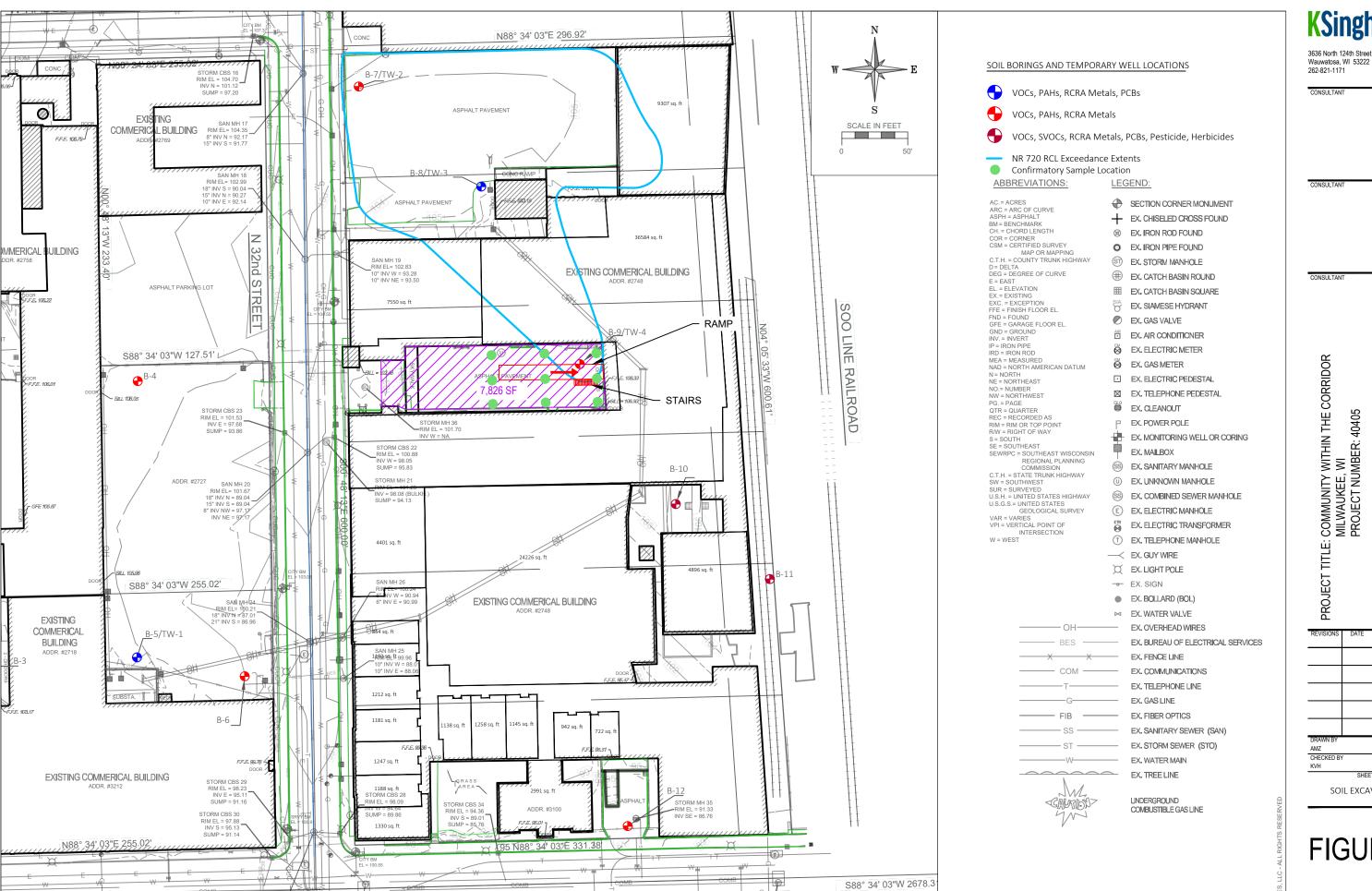
CLIENT:

PROJECT		CLIENT:
EVISIONS	DATE	DESCRIPTION
RAWN BY MZ		DATE 01/29/2021
HECKED BY	′	DATE 01/29/2021

SUB-SLAB VAPOR SAMPLING RESULTS

FIGURE 5

SHEET 5



PLOT DATE : 1/30/2021 12:48 PM PLOT BY :RYAN TO

FILE NAME: P:\40405 CWC REMEDIAL ACTION PLAN\ENVIRONMENTAL\CADD\SHEETS\RAP\CWC RAP - FIG 2, 6,10.DWG



COMMUNITY WITHIN THE CORRIDOR LIMITED PARTNERSHIP

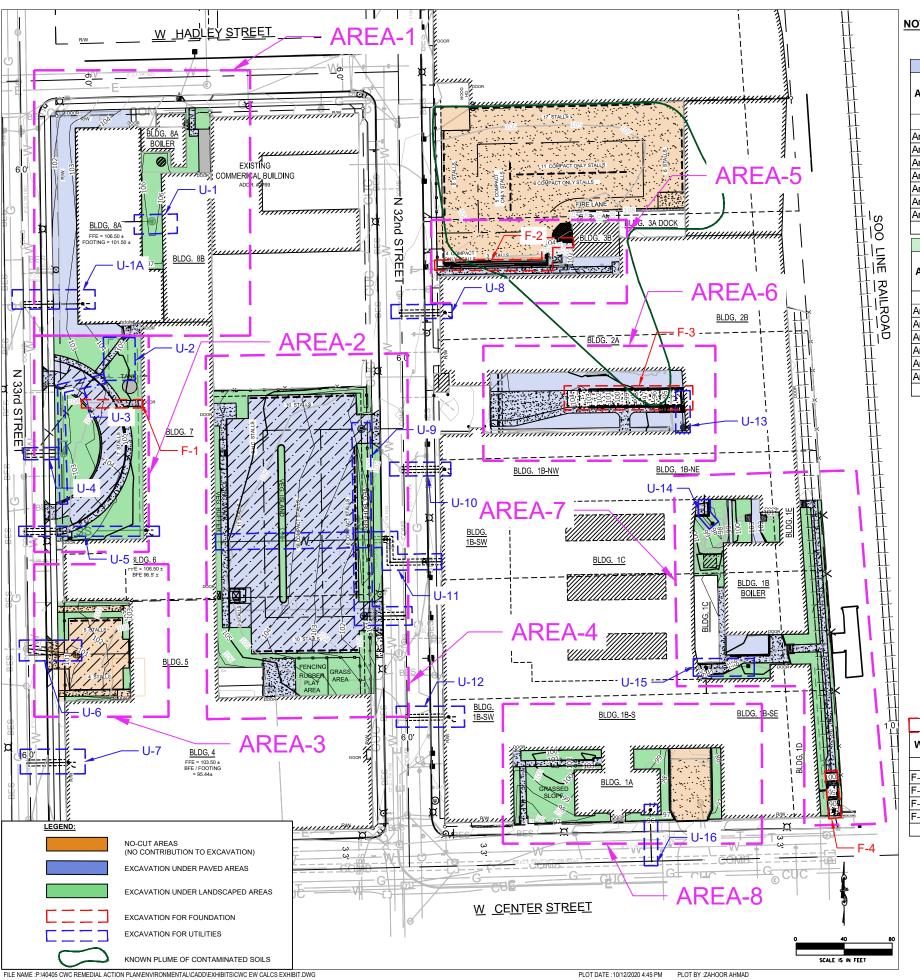
CLIENT:

01/29/2021 01/29/2021

SOIL EXCAVATION MAP

FIGURE 6A

SHEET 6A



NOTE:

EXCAVATION QUANTITIES ESTIMATED BY ENVIRONMENTAL CONSULTANT FOR DISPOSAL PURPOSES. ACTUAL EXCAVATION QUANTITIES TO BE DETERMINED BY THE CONTRACTOR.

	Excavation under Paved Areas									
Area No.	Avg. Cut Depth (Ft)	Pavement Area (S.Ft)	Avg. Pavement Depth (In)	Subgrade Depth (In)	Corrected Cut Depth (Ft)	Cut Volume (C.Ft)	Cut Volume (C.Yd)			
	Α	В	С	D	E= A+1/12x(C+D)	F=BxE	G = F/27			
Area-1	-0.11	5,525	0.0	8.0	0.56	3,103	115			
Area-2	0.56	5,270	4.5	8.0	1.60	8,441	313			
Area-4	0.65	24,900	5.0	8.0	1.73	43,160	1,599			
Area-5	0.03	2,300	0.0	8.0	0.70	1,602	59			
Area-6	-0.22	6,390	0.0	8.0	0.45	2,854	106			
Area-7	0.04	2,580	3.0	8.0	0.96	2,468	91			
Area-8	-0.11	675	0.0	8.0	0.56	376	14			
		62,004	2,296							

	Excavation under Landscaped Areas								
Area No.		Landscaped Area (S.Ft)	Topsoil Depth (In)	Engineered Barrier Depth (In)	Corrected Cut Depth (Ft)	Cut Volume (C.Ft)	Cut Volume (C.Yd)		
	Α	В	C	D	E= A+1/12x(C+D)	F=BxE	G = F/27		
Area-1	-0.11	2,450	0	18	1.40	3,418	127		
Area-2	0.56	7,372	6	18	2.56	18,872	699		
Area-3	-1.34	1,100	6	18	0.66	726	27		
Area-4	0.65	23,135	857						
Area-7	0.04	5,460	0	18	1.54	8,408	311		
Area-8	-0.11	4,390	0	18	1.39	6,102	226		
		60,661	2,247						

	Excavation for Utilities							
Trench No.	Length (Ft)	Length Width		Cut Volume	Cut Volume (C.YD)	Notes		
	Α	В	С	D = A x B x C	E = D / 27			
U-1	10	4	2	80	3	Storm		
U-1A	56	4	9	2,016	75	Sanitary		
U-2	40	25	8.5	8,500	315	Vault		
U-3	135	4	2.5	1,350	50	Storm		
U-4	32	4	4	512	19	Storm		
U-5	109	4	8.5	3,706	137	Sanitary		
U-6	40	4	4	640	24	Storm		
U-7	40	4	10	1,600	59	Sanitary		
U-8	43	4	10	1,720	64	Sanitary		
U-9	105	4	2.5	1,050	39	Storm		
U-10	42	4	10	1,680	62	Sanitary		
U-11	210	4	5.5	4,620	171	Water		
U-12	43	4	10	1,720	64	Sanitary		
U-13	30	4	3	360	13	Storm		
U-14	22	4	3	264	10	Storm		
U-15	43	4	3.5	602	22	Storm		
U-16	50	4	10	2,000	74	Sanitary		
	Total Utilities 32,420 1,201							

^{*} Depth of pavement and/or landscaping has considered

	Excavation for Foundations							
Wall No.	Length Width (Ft) (Ft)			Cut Volume (C.ft)	Cut Volume (C.YD)	Notes		
	Α	В	С	D = A x B x C	E = D / 27			
F-1	40	4	4.0	640	24	Wall Removal		
F-2	125	8	4.0	4,000	148	Wall Removal & Construction		
F-3 100 18 6.5		11,700	433	Vehicle Ramp Construction				
F-4	36	12	10.3	4,469	166	Steps Construction & Storm		
Total Foundation				20,809	771			

Excavation/Cut Summary						
Excavation Areas	Cut Volume (C.ft)	Cut Volume (C.YD)				
Paved Areas	62,004	2,296				
Landscaped Areas	60,661	2,247				
Utility Trenches	32,420	1,201				
Foundations	20,809	771				
Total Site Cut	175,895	6,515				



3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

CONSULTANT

CONSULTAI

AUKEE, WI ECT NUMBER: 40405

REVISIONS DATE DESCRIPTION

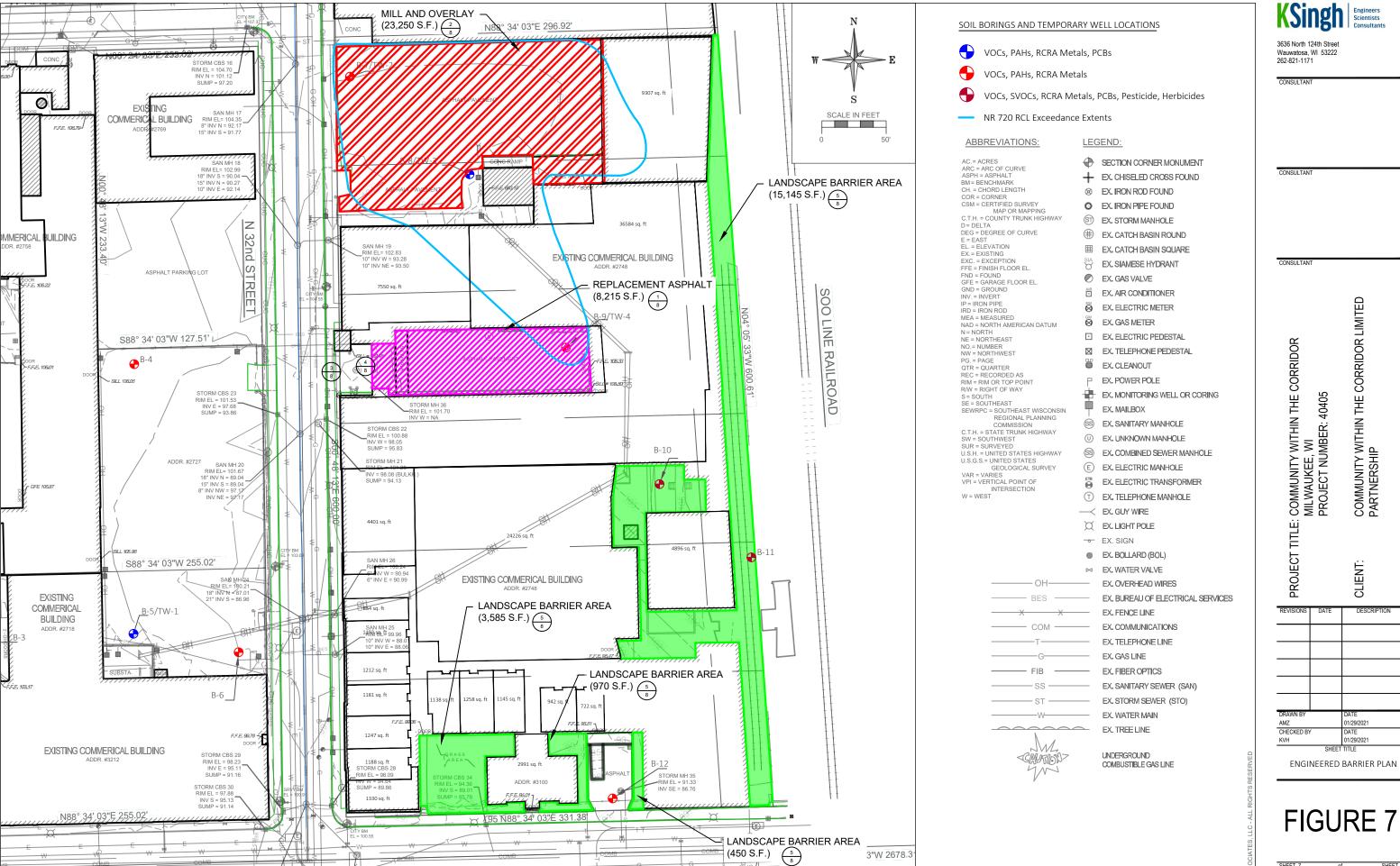
DRAWN BY DATE AMZ 09/21/2020

CHECKED BY DATE

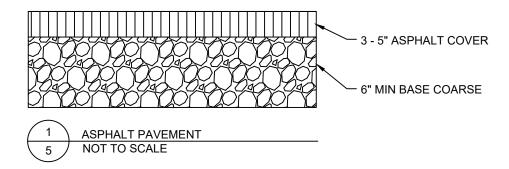
EARTHWORK CALCULATIONS EXHIBIT

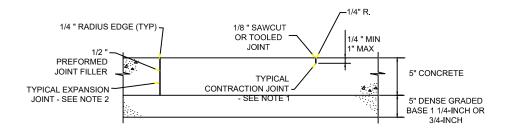
FIGURE 6B

SHEET 6B of SHEET

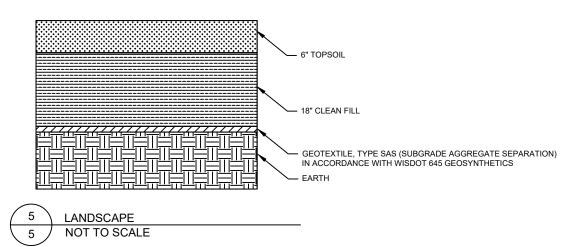


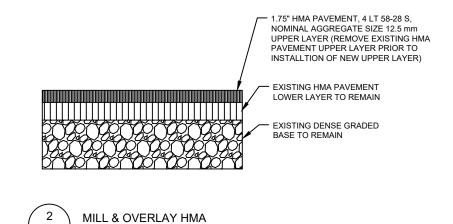
FILE NAME :P:\40405 CWC REMEDIAL ACTION PLAN\ENVIRONMENTAL\CADD\SHEETS\RAP\CWC RAP - FIG 2, 6,10.DWG

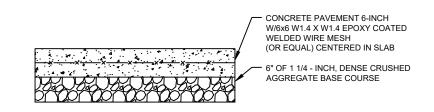




3 CONCRETE SIDEWALK
5 NOT TO SCALE







NOT TO SCALE

4 CONCRETE PAVEMENT
5 NOT TO SCALE



3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

CONSULTANT

CONSULTANT

CONSULTANT

COMMUNITY WITHIN THE CORRIDOR
MILWAUKEE, WI
PROJECT NUMBER: 40405
COMMUNITY WITHIN THE CORRIDOR LIMITED
PARTNERSHIP

DESCRIPTION

CLIENT:

CHENK

DESCRIPTION

DESCRIPTION

AWZ 01/29/2021

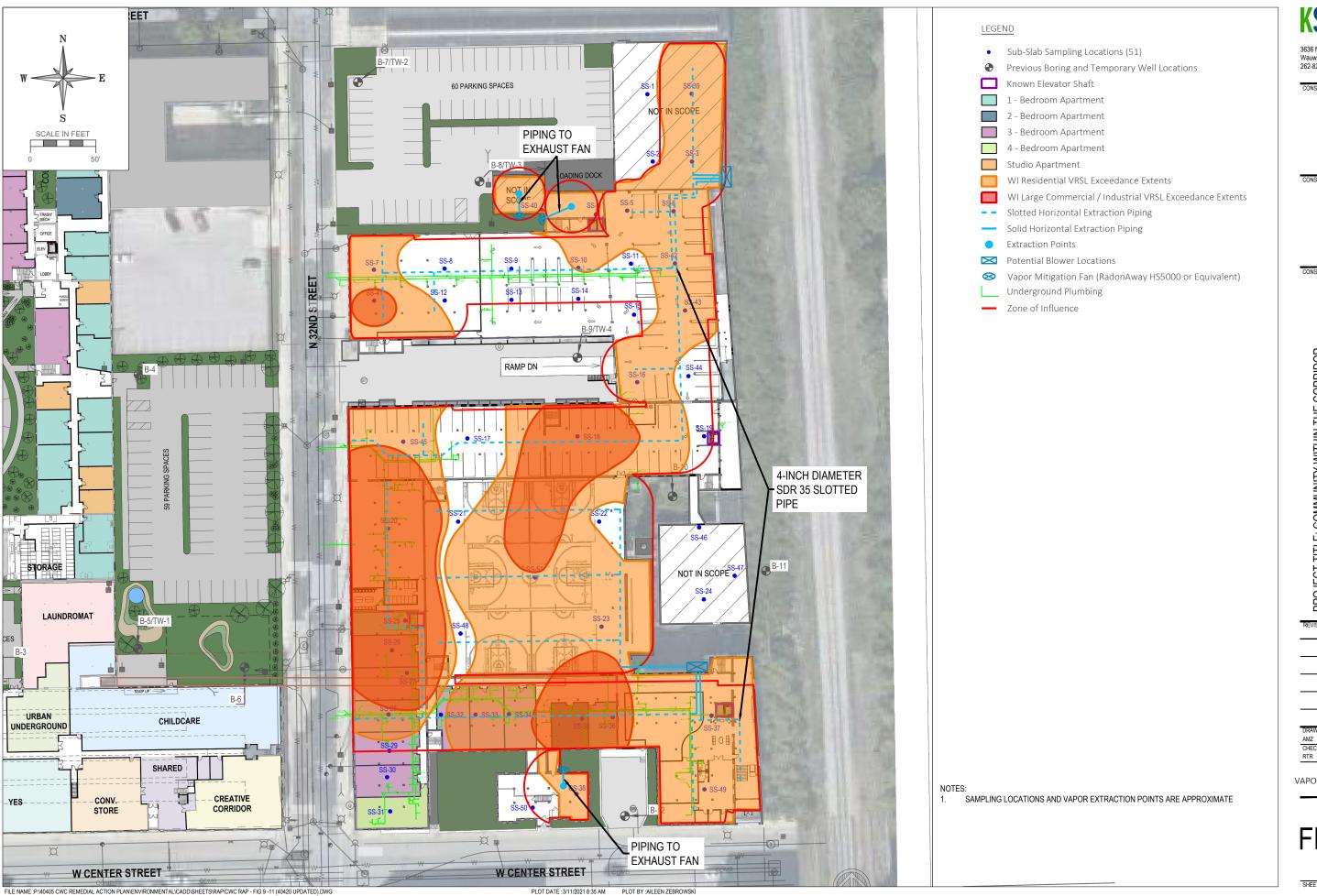
CHECKED BY DATE

KVH 01/29/2021

SHEFT TITLE

ENGINEERED BARRIER DETAILS

FIGURE 8



KSingh Engineers Scientists Consultant

3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

CONSULTANT

ONSULTANT

CONSULTANT

COMMUNITY WITHIN THE CORRIDOR MILWAUKEE, WI PROJECT NUMBER: 40405

AWN BY DATE

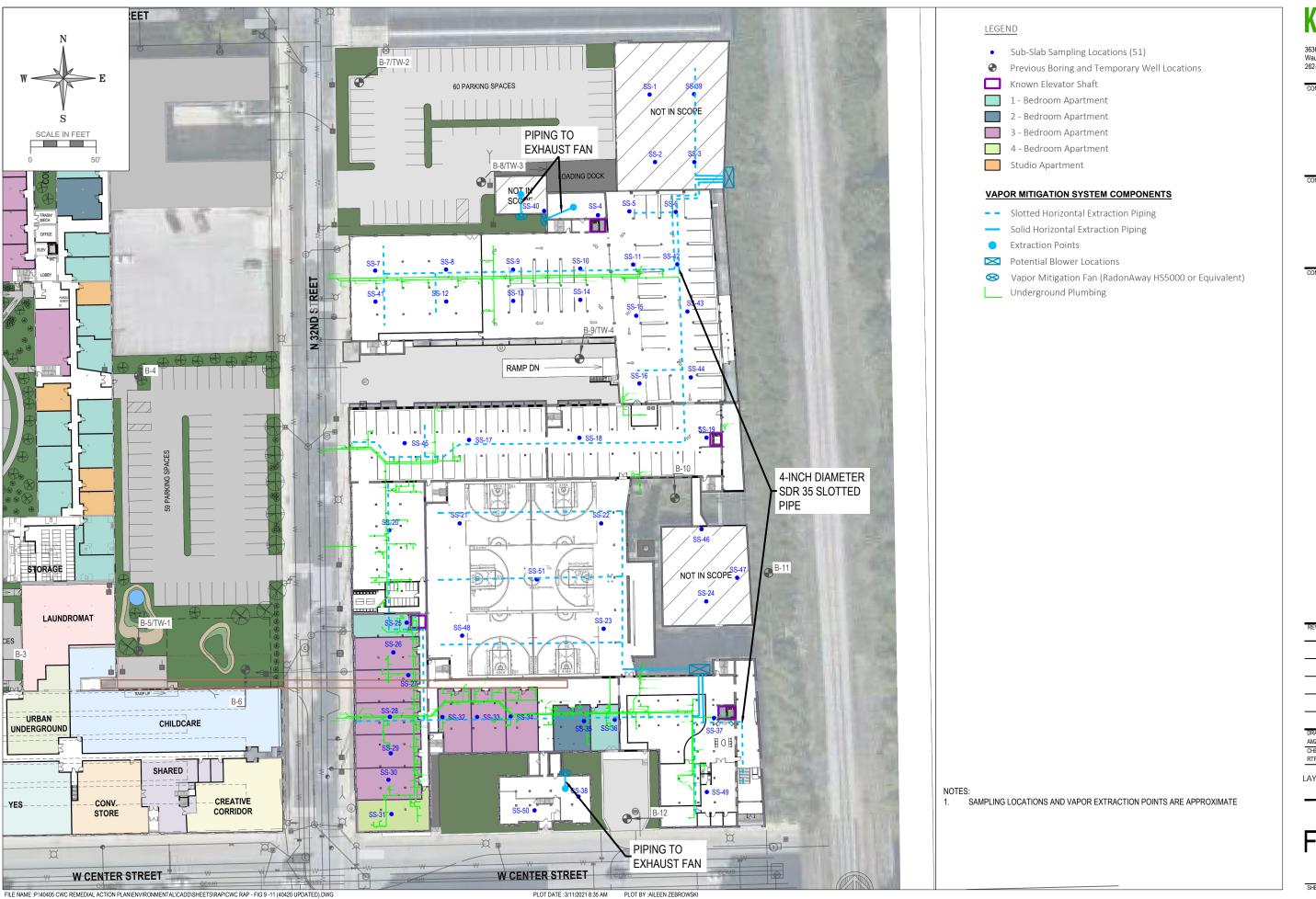
Z 03/04/2021

R 03/04/2021

VAPOR INTRUSION MITIGATION PLAN

FIGURE 9

ET 9 of SHEET



KSingh Engineers Scientists Consultan

3636 North 124th Street Wauwatosa, WI 53222 262-821-1171

CONSULTANT

CONSULTAN

CONSULTANT

COMMUNITY WITHIN THE CORRIDOR MILWAUKEE, WI PROJECT NUMBER: 40405

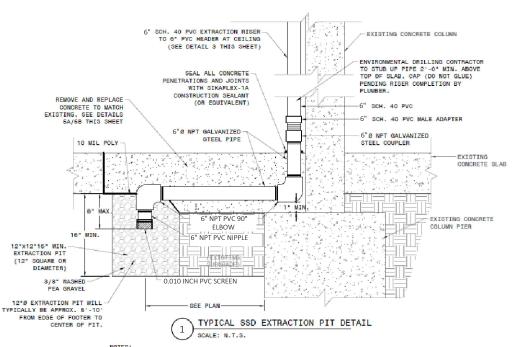
S DATE DES

EAWN BY DATE
IZ 03/04/2021
ECKED BY DATE
D 3/04/2021

LAYOUT OF THE PROPOSED VAPOR MITIGATION SYSTEM

FIGURE 10

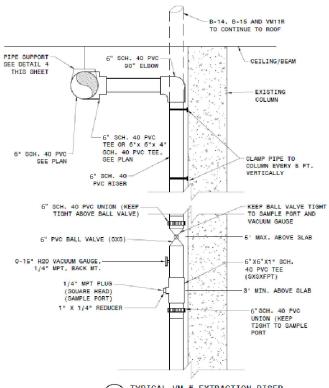
ET 10 of



NOTES:
1. SAW-CUT AND EXCAVATE 12"X12"X16" OR CORE 12" DIAMETER HOLE THROUGH EXISTING CONCRETE USING DIAMOND CORE RIG.

- ANCHOR CORE RIG TO CONCRETE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
- ALL EXCAVATED SUB-SLAB MATERIALS TO BE DRUMMED OR CONTAINERIZED REINFORCING STEEL NOT SHOWN.
- 5. ENVIRONMENTAL DRILLING CONTRACTOR TO COMPLETE ALL SUBSURFACE WORK WITH PIPING STUBBED UP 2 FT. ABOVE SLAB PENDING RISER COMPLETION BY PLUMBING CONTRACTOR, IN ACCORDANCE WITH
- DETAIL 3.

 CONTRACTOR IS TO PREP AND COMPACT EXISTING SUBGRADE PRIOR TO PLACEMENT OF PEA GRAVEL AND CONCRETE, SUBGRADE SHALL BE COMPACTED TO 100% STANDARD PROCTOR.



TYPICAL VM-# EXTRACTION RISER SCALE: N.T.S.

PLUMBING CONTRACTOR TO COMPLETE RISER CONSTRUCTION AND ALL PIPING FROM STUB-UP 2 FT ABOVE FLOOR SLAB TO SSOS EQUIPMENT AT 1 FOOT ABOVE ROOF.

4000 PSI, 28 DAY

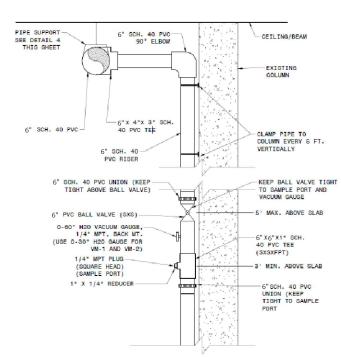
EXISTING

(5B)

SCALE: N.T.S.

COMPRESSIVE STRENGTH CONCRETE, MATCH

IN-SITU-



TYPICAL VE-# EXTRACTION RISER (3) SCALE: N.T.S.

- 1. PLUMBING CONTRACTOR TO COMPLETE RISER CONSTRUCTION AND ALL PIPING FROM STUB-UP 2 FT ABOVE FLOOR SLAB TO SSDS EQUIPMENT AT ROOF.
- 2. EXTRACTION RISERS VM-1 AND VM-2 TO BE REDUCED FROM 6" SCH 40 PVC AT RISER STUB-UP AND CONSTRUCTED IN ACCORDANCE WITH THIS DETAIL INSTEAD OF THE VM-# RISER DETAIL 2 ON THIS SHEET.

SEE TRENCH REPAIR REBAR DETAIL 6

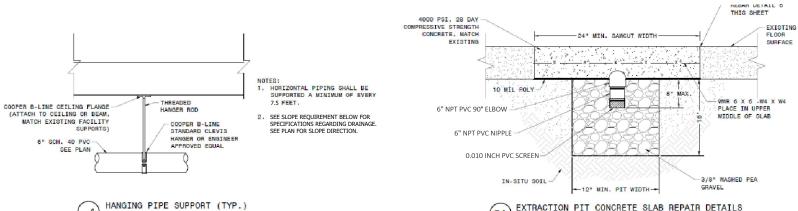
FLOOR SURFACE

THIS SHEET

- WWR 6 X 6 -W4 X W4 PLACE IN UPPER MIDDLE OF SLAB

EXISTING COLUMN

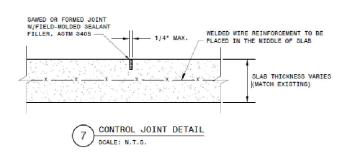
FOOTING, ELEVATION

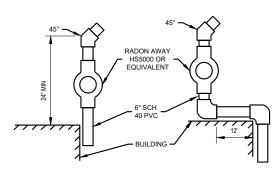


HANGING PIPE SUPPORT (TYP.) SCALE: N.T.S.

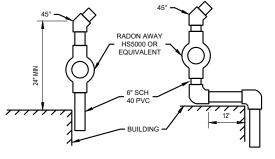
SLOPE REQUIREMENT:

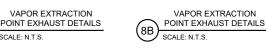
ABOVE-GROUND DUCT PIPING SHALL HAVE A CONTINUOUS DOWNWARD SLOPE TOWARDS THE SUCTION POINT(S) OF NOT LESS THAN & INCH PER FOOT TO ALLOW RAINWATER OR CONDENSATION WITHIN THE PIPES TO DRAIN DOWNWARD INTO THE GROUND BENEATH THE SLAB OR SOIL-GAS RETARDER MEMBRANE. CONFIGURATIONS THAT RESULT IN OBSTRUCTED AIRFLOW BY ALLOWING WATER TO COLLECT WITHIN DUCT PIPING ARE PROHIBITED. WHEN THE REQUIRED SLOPE OR DRAINAGE CANNOT BE ACHIEVED, OTHER METHODS FOR DRAINING COLLECTED WATER SHALL BE PROVIDED.

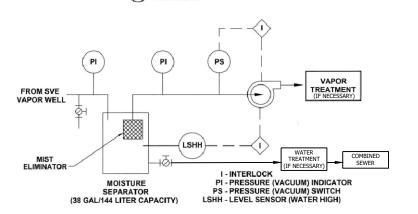




SCALE: N.T.S.







4" NPT GALVANIZED STEEL PIPE

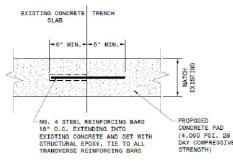
12" MIN.

TRENCH WIDTH

PIPING TRENCH TO COLUMN

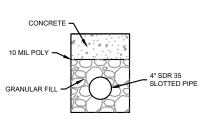
CONCRETE SLAB REPAIR DETAILS





TYPICAL TRENCH REPAIR REBAR DETAIL SCALE: N.T.S. NOTE:

- WHERE TRENCH LENGTHS EXCEEDS 10 FT.
 TRANSVERSE CONTROL JOINTS TO BE JACED ON 10
 FT. OPACING. SEE DETAIL 7 THIS SHEET.
 10 MIL POLY TO BE PLACED OVER TRENCH OR
- EXTRACTION PIT PRIOR TO CONCRETE POUR.



EXTRACTION TRENCH DETAIL SCALE: N.T.S.



Wauwatosa, WI 53222 262-821-1171

CONSULTANT

CORRIDOR LIMITED

WITHIN THE PROJECT NUMBER: THE:

COMMUNITY WITHIN THE PARTNERSHIP

PROJECT CLIENT: 03/04/2021 CHECKED BY

SHEET TITLE VAPOR INTRUSION MITIGATION DETAILS

03/04/2021

RTR

FIGURE 11

SHEET 11

TABLES



Table 1. Soil Quality Test Results Community Within the Corridor, 2748 N 32nd Street, Milwaukee, Wisconsin

Sample							B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
Depth (feet)	1		NR 720 RCLs	NR 720 RCLs -	NR 720 RCLs -	Background	5.5-7.5	4-6	4-6	4-6	3-5	3-5	3-5	9-11	4-6	3-4	2-3	3.5-5.5
Soil Type	Units	Method	for GW	Non-Industrial Use for Direct Contact	Industrial Use for Direct Contact	Threshold	Silty CLAY	Silty CLAY	Silty CLAY	Silty CLAY	CLAY	Sandy CLAY	SAND & GRAVEL	Silty CLAY	Sandy CLAY	FILL	FILL	Silty CLAY
Soil Conditions			Protection (1)	Protection (1)	Protection (1)	Value	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated
Sampling Date							4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/23/2020	4/23/2020	4/10/2020
Physical Characteristics	0/						44.0	40.4	44.7	40.4	42.4	44.4	45.0	40.5	12	7.0	0.0	0.0
Percent Moisture Percent Solids	%						11.9 88.1	12.4 87.6	11.7 88.3	12.1 87.9	13.1 86.9	11.4 88.6	15.8 84.2	10.5 89.5	13 87	7.6 92.4	93.4	9.2 90.8
Volatile Organic Compounds (VC	70						00.1	07.0	00.3	07.9	00.9	00.0	04.2	09.0	07	32.4	33.4	90.0
1,1,1,2-Tetrachloroethane	mg/Kg	8260B	0.0534	2.78	12.3		<0.040	<0.036	<0.039	<0.043	<0.046	<0.059	<0.047	<0.041	<0.051	<0.045	<0.044	<0.041
1,1,1-Trichloroethane	mg/Kg	8260B	0.1402	640	640		< 0.033	<0.030	<0.032	<0.035	<0.038	<0.048	<0.039	0.18	0.077 J	<0.037	<0.037	<0.034
1,1,2,2-Tetrachloroethane	mg/Kg	8260B	0.0002	0.81	3.6		<0.035	<0.031	<0.033	<0.037	<0.040	<0.051	<0.041	<0.035	<0.044	<0.039	<0.038	<0.035
1,1,2-Trichloroethane	mg/Kg	8260B	0.0032	1.59	7.01		<0.031	<0.028	<0.029	<0.032	<0.035	<0.045	<0.036	<0.031	<0.039	<0.035	<0.034	<0.031
1,1-Dichloroethane	mg/Kg	8260B	0.4834 0.005	5.06	22.2		<0.036	<0.032	<0.034	<0.038	<0.041	<0.052	<0.042	<0.036	<0.045	<0.040	<0.039 <0.038	<0.036
1,1-Dichloroethene 1,1-Dichloropropene	mg/Kg mg/Kg	8260B 8260B	0.005	320	1,190		<0.034 <0.026	<0.031 <0.024	<0.033 <0.025	<0.036 <0.027	<0.039 <0.030	<0.050 <0.038	<0.040 <0.031	<0.034 <0.026	<0.043 <0.033	<0.038 <0.029	<0.038	<0.034 <0.026
1,2,3-Trichlorobenzene	mg/Kg	8260B		62.6	934		<0.040	<0.036	<0.038	<0.042	<0.046	<0.058	<0.047	<0.040	<0.050	<0.045	<0.044	<0.040
1,2,3-Trichloropropane	mg/Kg	8260B	0.0519	0.005	0.109		<0.036	<0.033	< 0.035	<0.038	<0.041	<0.053	<0.042	<0.036	<0.046	<0.041	<0.040	<0.037
1,2,4-Trichlorobenzene	mg/Kg	8260B	0.408	24	113		<0.030	<0.027	<0.029	<0.032	<0.034	<0.044	<0.035	<0.030	<0.038	<0.034	<0.033	<0.030
1,2,4-Trimethylbenzene	mg/Kg	8260B	1.3787**	219	219		<0.031	<0.028	<0.030	<0.033	<0.036	<0.046	0.11	34	0.35	<0.035	0.28	<0.032
1,2-Dibromo-3-Chloropropane	mg/Kg	8260B	0.0002	0.008	0.092		<0.17	<0.16	<0.17	<0.18 *	<0.20 *	<0.25 *	<0.20 *	<0.17 *	<0.22 *	<0.20 *	<0.19	<0.18 *
1,2-Dibromoethane 1,2-Dichlorobenzene	mg/Kg mg/Kg	8260B 8260B	0.0000282 1.168	0.05 376	0.221 376		<0.034 <0.029	<0.030 <0.026	<0.032 <0.028	<0.036 <0.031	<0.039 <0.033	<0.049 <0.043	<0.040 <0.034	<0.034 <0.029	<0.042 <0.037	<0.038 <0.033	<0.037 <0.032	<0.034 <0.030
1,2-Dichloroethane	mg/Kg	8260B	0.0028	0.652	2.87		<0.029	<0.026	<0.033	<0.036	<0.039	<0.050	<0.040	<0.029	<0.037	<0.038	<0.032	<0.035
1,2-Dichloropropane	mg/Kg	8260B	0.0033	3.4	15		<0.037	<0.034	<0.036	<0.039	<0.043	<0.055	<0.044	<0.038	<0.047	<0.042	<0.041	<0.038
1,3,5-Trimethylbenzene	mg/Kg	8260B	1.3787**	182	182		<0.033	<0.030	<0.032	<0.035	<0.038	<0.048	<0.039	14	0.080 J	<0.037	0.11	<0.034
1,3-Dichlorobenzene	mg/Kg	8260B	1.1528	297	297		<0.035	<0.032	<0.033	<0.037	<0.040	<0.051	<0.041	<0.035	<0.044	<0.039	<0.038	<0.035
1,3-Dichloropropane	mg/Kg	8260B	0.0003	2.37	10.6		<0.032	<0.029	<0.030	<0.033	<0.036	<0.046	<0.037	<0.032	<0.040	<0.035	<0.035	<0.032
1,4-Dichlorobenzene 2.2-Dichloropropane	mg/Kg mg/Kg	8260B 8260B	0.144	3.74 191	16.4 191		<0.032 <0.039	<0.029 <0.035	<0.030 <0.037	<0.034 <0.041	<0.036 <0.044	<0.046 <0.057	<0.037 <0.045	<0.032 <0.039	<0.040 <0.049	<0.036 <0.044	<0.035 <0.043	<0.032 <0.039
2-Chlorotoluene	mg/Kg	8260B		907	907		<0.039	<0.025	<0.026	<0.029	<0.031	<0.037	<0.032	<0.039	<0.035	<0.031	<0.030	<0.028
4-Chlorotoluene	mg/Kg	8260B		253	253		<0.030	<0.028	<0.029	<0.032	<0.035	<0.045	<0.036	<0.031	<0.039	<0.034	<0.034	<0.031
Benzene	mg/Kg	8260B	0.0051	1.6	7.07		<0.013	<0.012	<0.012	< 0.013	<0.015	<0.019	0.077	0.13	0.046	<0.014	0.055	<0.013
Bromobenzene	mg/Kg	8260B		342	679		<0.031	<0.028	<0.030	<0.033	<0.036	<0.045	<0.036	<0.031	<0.039	<0.035	<0.034	<0.031
Bromochloromethane	mg/Kg	8260B		216	906		<0.037	<0.034	<0.036	<0.039	<0.043	<0.055	<0.044	<0.038	<0.047	<0.042 *	<0.041 *	<0.038
Bromodichloromethane	mg/Kg	8260B	0.0003	0.418 25.4	1.83		<0.032	<0.029	<0.031 <0.040	<0.034	<0.037 <0.048	<0.047	<0.038	<0.033	<0.041	<0.036 <0.047	<0.036 <0.047	<0.033
Bromoform Bromomethane	mg/Kg mg/Kg	8260B 8260B	0.0023 0.0051	9.6	113 43		<0.042 <0.069 *	<0.038 <0.063 *	<0.040	<0.045 <0.073 *	<0.048	<0.062 <0.10 *	<0.050 <0.081 *	<0.043 <0.070 *	<0.053 <0.088 *	<0.047	<0.047 <0.077 *F1	<0.043 <0.070 *
Carbon tetrachloride	mg/Kg	8260B	0.0039	0.916	4.03		<0.033	<0.030	<0.032	<0.075	<0.038	<0.049	<0.039	<0.034	<0.042	<0.038	<0.037	<0.034
Chlorobenzene	mg/Kg	8260B		370	761		<0.034	<0.030	<0.032	<0.036	<0.039	<0.049	<0.040	<0.034	<0.042	<0.038	<0.037	<0.034
Chloroethane	mg/Kg	8260B	0.2266	2,120	2,120		<0.044	<0.040	<0.042	<0.046	<0.050	<0.064	<0.052	<0.044	<0.055	<0.049 *	<0.048 *	<0.045
Chloroform	mg/Kg	8260B	0.0033	0.454	1.98		<0.032	<0.029	<0.031	<0.034	<0.037	<0.047	<0.038	<0.032	<0.041	<0.036	<0.036	<0.033
Chloromethane cis-1,2-Dichloroethene	mg/Kg mg/Kg	8260B 8260B	0.0155 0.0412	159 156	669 2,340		<0.028 <0.036	<0.025 <0.032	<0.027 <0.034	<0.029 <0.038	<0.032 <0.041	<0.041 <0.052	<0.033 <0.042	<0.028 0.052 J	<0.035 <0.045	<0.031 <0.040	<0.031 <0.039	<0.028 <0.036
cis-1,3-Dichloropropene	mg/Kg	8260B	0.0003	1,210	1,210		<0.036	<0.032	<0.035	<0.038	<0.041	<0.052	<0.042	<0.037	<0.045	<0.040	<0.039	<0.037
Dibromochloromethane	mg/Kg	8260B	0.032	8.28	38.9		<0.042	<0.039	<0.041	<0.045	<0.049	<0.062	<0.050	<0.043	<0.054	<0.048	<0.047	<0.043
Dibromomethane	mg/Kg	8260B		34	143		<0.023	<0.021	<0.023	<0.025	<0.027	<0.034	<0.028	<0.024	<0.030	<0.026 *	<0.026 *	<0.024
Dichlorodifluoromethane	mg/Kg	8260B	3.0863	126	530		<0.059	<0.053	<0.056	<0.062	<0.067	<0.086	<0.069	<0.059	<0.074	<0.066	<0.065	<0.060
Ethylbenzene	mg/Kg	8260B	1.57	8.02	35.4		<0.016	<0.014	<0.015	<0.017	<0.018	<0.023	0.051	5.6	0.13	<0.018	0.08	<0.016
Hexachlorobutadiene	mg/Kg mg/Kg	8260B 8260B		1.63 2,260	7.19 2,260		<0.039 <0.024	<0.035 <0.022	<0.037 <0.023	<0.041 <0.025	<0.045 <0.028	<0.057 <0.035	<0.046 <0.028	<0.039 <0.024	<0.049 <0.030	<0.044 <0.027	<0.043 <0.027	<0.039 <0.024
Isopropyl ether Isopropylbenzene	mg/Kg	8260B		268	268		<0.024	<0.022	<0.023	<0.025	<0.028	<0.035	<0.028	1.8	0.11	<0.027	<0.027	<0.024
Methyl tert-butyl ether	mg/Kg	8260B	0.027	63.8	282		<0.034	<0.031	<0.033	<0.036	<0.039	<0.050	<0.040	<0.035	<0.043	<0.039 *	<0.038 *	<0.035
Methylene Chloride	mg/Kg	8260B	0.0026	61.8	1,150		<0.14	<0.13	<0.14	<0.15	<0.16	<0.21	<0.17	<0.14	<0.18	0.29 J*	0.27 J*	<0.14
Naphthalene	mg/Kg	8260B	0.658182	5.52	24.10		<0.029	<0.026	<0.028	<0.031	<0.033	<0.043	0.15	3.9	0.7	<0.033	0.69 B	<0.030
n-Butylbenzene N-Propylbenzene	mg/Kg	8260B 8260B		108 264	108 264		<0.034 <0.036	<0.031 <0.033	<0.032 <0.035	<0.036 <0.038	<0.039 <0.041	<0.049 <0.053	<0.040 <0.042	10 4.2	0.059 J 0.13	<0.038 <0.041	<0.037 0.048 J	<0.034 <0.037
p-Isopropyltoluene	mg/Kg mg/Kg	8260B 8260B		162	162		<0.036	<0.033	<0.035	<0.038	<0.041	<0.053	<0.042 <0.037	5.1	<0.040	<0.041	<0.035	<0.037
sec-Butylbenzene	mg/Kg	8260B		145	145		<0.035	<0.029	<0.033	<0.037	<0.040	<0.051	<0.037	3.8	0.045 J	<0.039	<0.038	<0.035
Styrene	mg/Kg	8260B	0.22	867	867		<0.034	<0.030	<0.032	<0.036	<0.039	<0.049	<0.040	<0.034	<0.042	<0.038	<0.037	<0.034
tert-Butylbenzene	mg/Kg	8260B		183	183		<0.035	<0.031	<0.033	<0.037	<0.040	<0.051	<0.041	0.38	<0.044	<0.039	<0.038	<0.035
Tetrachloroethene	mg/Kg	8260B	0.0045	33	145		<0.032	<0.029	<0.031	<0.034	<0.037	<0.047	<0.038	0.15	<0.041	<0.036	<0.036	<0.033
Toluene	mg/Kg	8260B	1.1072	818	818		<0.013	<0.012	<0.012	<0.014	<0.015	<0.019	0.28	0.23 <0.031	0.29	<0.014	0.38	<0.013
trans-1,2-Dichloroethene trans-1,3-Dichloropropene	mg/Kg mg/Kg	8260B 8260B	0.0626	1560 1,510	1850 1,510		<0.030 <0.032	<0.028 <0.029	<0.029 <0.030	<0.032 <0.033	<0.035 <0.036	<0.045 <0.046	<0.036 <0.037	<0.031	<0.039 <0.040	<0.034 <0.035	<0.034 <0.035	<0.031 <0.032
Trichloroethene	mg/Kg	8260B	0.0036	1.3	8.41		<0.032	<0.029	<0.014	<0.035	<0.036	<0.040	<0.037	2.2	0.16	<0.035	<0.035	<0.032
Trichlorofluoromethane	mg/Kg	8260B		1,230	1,230		<0.037	<0.034	<0.036	<0.039	<0.043	<0.055	<0.044	<0.038	<0.047	<0.042	<0.041	<0.038
Vinyl chloride	mg/Kg	8260B	0.0001	0.067	2.08		<0.023	<0.021	<0.022	<0.024	<0.026	<0.033	<0.027	<0.023	<0.029	<0.026	<0.025	<0.023
Xylenes, Total	mg/Kg	8260B	3.96	1,212	1212		<0.019	<0.017	<0.018	<0.020	<0.022	<0.028	0.37	15	11	<0.022	0.81	<0.019
Semivolatile Organic Compound		00700	0.400	0.4	140											40.000	40.000	
1,2,4-Trichlorobenzene 1,2-Dichlorobenzene	mg/Kg mg/Kg	8270D 8270D	0.408 1.168	24 376	113 376											<0.038 <0.042	<0.038 <0.042	
1,3-Dichlorobenzene	mg/Kg	8270D	1.1528	297	297											<0.042	<0.042	
1,4-Dichlorobenzene	mg/Kg	8270D	0.144	3.74	16.4											<0.045	<0.045	
1-Methylnaphthalene	mg/Kg	8270D		17.6	72.7											<0.0087	0.27	
2,2'-oxybis[1-chloropropane]	mg/Kg	8270D														<0.041	<0.041	



Table 1. Soil Quality Test Results Community Within the Corridor, 2748 N 32nd Street, Milwaukee, Wisconsin

Sample							B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
Depth (feet)	1		NR 720 RCLs	NR 720 RCLs -	NR 720 RCLs -	Background	5.5-7.5	4-6	4-6	4-6	3-5	3-5	3-5	9-11	4-6	3-4	2-3	3.5-5.5
Soil Type	Units	Method	for GW	Non-Industrial Use for Direct Contact	Industrial Use for Direct Contact	Threshold	Silty CLAY	Silty CLAY	Silty CLAY	Silty CLAY	CLAY	Sandy CLAY	SAND & GRAVEL	Silty CLAY	Sandy CLAY	FILL	FILL	Silty CLAY
Soil Conditions			Protection (1)	Protection (1)	Protection (1)	Value	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated
Sampling Date							4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/23/2020	4/23/2020	4/10/2020
2,4,5-Trichlorophenol	mg/Kg	8270D		6320	82,100											<0.081	<0.081	
2,4,6-Trichlorophenol	mg/Kg	8270D		49.3 190	209 2460											<0.12 <0.084	<0.12 <0.084	
2,4-Dichlorophenol 2,4-Dimethylphenol	mg/Kg mg/Kg	8270D 8270D		1260	16,400											<0.084	<0.084	
2,4-Dinitrophenol	mg/Kg	8270D		126	1640											<0.62	<0.62	
2,4-Dinitrotoluene	mg/Kg	8270D	0.0001	1.74	7.37											<0.056	<0.056	
2,6-Dinitrotoluene	mg/Kg	8270D	0.0001	0.363	1.54											<0.070	<0.070	
2-Chloronaphthalene	mg/Kg	8270D		4780	60,300											<0.039	<0.039	
2-Chlorophenol	mg/Kg	8270D		391	5,840											<0.061	<0.060	
2-Methylnaphthalene 2-Methylphenol	mg/Kg	8270D 8270D		239 3160	3010 41,000											<0.0065 <0.057	0.39 <0.057	
2-Nitroaniline	mg/Kg mg/Kg	8270D		627	8010											<0.048	<0.048	
2-Nitrophenol	mg/Kg	8270D														<0.084	<0.084	
3 & 4 Methylphenol	mg/Kg	8270D		9480**	123,100**											<0.059	<0.059	
3,3'-Dichlorobenzidine	mg/Kg	8270D														<0.050	<0.050	
3-Nitroaniline	mg/Kg	8270D														<0.11	<0.11	
4,6-Dinitro-2-methylphenol	mg/Kg	8270D														<0.28	<0.28	
4-Bromophenyl phenyl ether	mg/Kg	8270D		6220	92.100											<0.047	<0.047	
4-Chloro-3-methylphenol 4-Chloroaniline	mg/Kg mg/Kg	8270D 8270D		6320 2.71	82,100 11.5											<0.12 <0.17	<0.12 <0.17	
4-Chlorophenyl phenyl ether	mg/Kg	8270D		2.71												<0.041	<0.041	
4-Nitroaniline	mg/Kg	8270D		27.1	115											<0.15	<0.15	
4-Nitrophenol	mg/Kg	8270D														<0.34	<0.34	
Acenaphthene	mg/Kg	8270D		3590	45,200											<0.0064	<0.0064	
Acenaphthylene	mg/Kg	8270D														<0.0047	<0.0047	
Anthracene	mg/Kg	8270D	196.9492	17,900	100,000											0.016 J	0.087	
Benzo[a]anthracene Benzo[a]pyrene	mg/Kg mg/Kg	8270D 8270D	0.47	1.14 0.115	21 2.11											0.074 0.11	0.36 0.39	
Benzo[b]fluoranthene	mg/Kg	8270D	0.4781	1.15	21.1											0.16	0.59	
Benzo[g,h,i]perylene	mg/Kg	8270D														0.062	0.18	
Benzo[k]fluoranthene	mg/Kg	8270D		11.5	211											0.05	0.21	
Benzoic acid	mg/Kg	8270D		100,000	100,000											<0.35	<0.35	
Benzyl alcohol	mg/Kg	8270D		6320	82,100											<0.35	<0.35	
Bis(2-chloroethoxy)methane	mg/Kg	8270D		190	2460											<0.036	<0.036	
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate	mg/Kg	8270D 8270D	2.88	0.286 38.8	1.29 164											<0.053 <0.065	<0.053 0.24	
Butyl benzyl phthalate	mg/Kg mg/Kg	8270D	2.00	286	1210											<0.067	<0.067	
Carbazole	mg/Kg	8270D														<0.089	<0.088	
Chrysene	mg/Kg	8270D	0.1442	115	2110											0.094	0.45	
Dibenz(a,h)anthracene	mg/Kg	8270D		0.115	2											<0.0069	0.055	
Dibenzofuran	mg/Kg	8270D		73	1040											<0.042	0.11 J	
Diethyl phthalate	mg/Kg	8270D		50,600	100,000											<0.060	<0.060	
Dimethyl phthalate	mg/Kg	8270D 8270D	5.0333	6320	82,100											<0.046 <0.054	<0.046 <0.054	
Di-n-butyl phthalate Di-n-octyl phthalate	mg/Kg mg/Kg	8270D	0	632	8210											<0.058	<0.054	
Fluoranthene	mg/Kg	8270D	88.8778	2390	30,100											0.18	0.84	
Fluorene	mg/Kg	8270D	14.8299	2390	30,100											0.0054 J	<0.0050	
Hexachlorobenzene	mg/Kg	8270D	0.0252	0.252	1.15											<0.0082	<0.0082	
Hexachlorobutadiene	mg/Kg	8270D		1.63	7.19											<0.056	<0.056	
Hexachlorocyclopentadiene	mg/Kg	8270D		2.55	10.8											<0.20	<0.20	
Hexachloroethane	mg/Kg	8270D		2.52	11.1											<0.054 0.054	<0.054 0.16	
Indeno[1,2,3-cd]pyrene Isophorone	mg/Kg mg/Kg	8270D 8270D		1.15 571	21.1 2420											<0.040	<0.040	
Naphthalene	mg/Kg	8270D	0.6582	5.52	24.1											<0.0055	0.23	
Nitrobenzene	mg/Kg	8270D														<0.0088	<0.0088	
N-Nitrosodi-n-propylamine	mg/Kg	8270D		0.078	0.328											<0.043	<0.043	
N-Nitrosodiphenylamine	mg/Kg	8270D	0.0764	111	469											<0.042	<0.042	
Pentachlorophenol	mg/Kg	8270D	0.0028	1.02	3.97											<0.57	<0.57	
Phenanthrene	mg/Kg	8270D	2.2046	10.000	100.000											0.078	0.65	
Phenol Pyrene	mg/Kg mg/Kg	8270D 8270D	2.2946 54.5455	19,000 1790	100,000 22,600											<0.079 0.15	<0.079 0.68	
Polycyclic Aromatic Hydrocarbo		02/00	J4.J400	1130	22,000											0.10	0.00	
1-Methylnaphthalene	mg/Kg	8270D		17.6	72.7		<0.0091	<0.0092	<0.0092	<0.0091	<0.0093	<0.0090	0.066 J	0.77	0.69			<0.0087
2-Methylnaphthalene	mg/Kg	8270D		239	3010		<0.0069	<0.0069	<0.0069	<0.0069	<0.0070	<0.0068	0.074 J	1.1	0.84			<0.0066
Acenaphthene	mg/Kg	8270D		3590	45,200		<0.0067	<0.0068	<0.0068	<0.0067	<0.0068	<0.0066	0.1	0.47	0.041			<0.0064
Acenaphthylene	mg/Kg	8270D					<0.0049	<0.0050	<0.0050	<0.0049	<0.0050	<0.0048	0.023 J	0.052	<0.0050			<0.0047
Anthracene	mg/Kg	8270D	196.9492	17,900	100,000		<0.0063	<0.0063	<0.0063	<0.0063	<0.0064	<0.0061	0.19	0.55	0.074			<0.0060
Benzo[a]anthracene	mg/Kg	8270D		1.14	21		<0.0050	<0.0051	<0.0051	<0.0050	<0.0051	<0.0049	0.91	0.83	0.3			0.012 J
Benzo[a]pyrene	mg/Kg	8270D	0.47	0.115	2.11		<0.0072	<0.0073	<0.0073	<0.0072	<0.0074	<0.0071	1.1	0.87	0.32			<0.0069
Benzo[b]fluoranthene	mg/Kg	8270D 8270D	0.4781	1.15	21.1		<0.0081 <0.012	<0.0081 <0.012	<0.0081 <0.012	0.0090 J <0.012	<0.0082 <0.012	<0.0079 <0.012	1.5 0.4	0.95 0.28	0.57 0.13			<0.0077 <0.012
Benzo[g,h,i]perylene	mg/Kg	02/00					NU.U1Z	NU.U1Z	NU.U1Z	NU.U1Z	NU.012	NU.U1Z	V. 4	U. Z ŏ	U.13			NU.U1Z



Table 1. Soil Quality Test Results Community Within the Corridor, 2748 N 32nd Street, Milwaukee, Wisconsin

Sample				ND 700 DOI	ND 700 DOI		B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
Depth (feet)			NR 720 RCLs	NR 720 RCLs - Non-Industrial Use	NR 720 RCLs - Industrial Use for	Background	5.5-7.5	4-6	4-6	4-6	3-5	3-5	3-5	9-11	4-6	3-4	2-3	3.5-5.5
Soil Type	Units	Method	for GW	for Direct Contact	Direct Contact	Threshold	Silty CLAY	Silty CLAY	Silty CLAY	Silty CLAY	CLAY	Sandy CLAY	SAND & GRAVEL	Silty CLAY	Sandy CLAY	FILL	FILL	Silty CLAY
Soil Conditions			Protection (1)	Protection (1)	Protection (1)	Value	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unsaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated	Unstaturated
Sampling Date							4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/10/2020	4/23/2020	4/23/2020	4/10/2020
Benzo[k]fluoranthene	mg/Kg	8270D		11.5	211		<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.49	0.32	0.14			<0.011
Chrysene	mg/Kg	8270D	0.1442	115	2110		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	1.1	0.84	0.45			<0.0097
Dibenz(a,h)anthracene	mg/Kg	8270D		0.115	2		<0.0072	<0.0073	<0.0073	<0.0072	<0.0074	<0.0071	0.13	0.097	0.053			<0.0069
Fluoranthene	mg/Kg	8270D	88.8778	2390	30,100		<0.0069	<0.0070	<0.0070	<0.0069	<0.0071	<0.0068	2.2	2.2	0.55			<0.0066
Fluorene	mg/Kg	8270D	14.8299	2390	30,100		<0.0053	<0.0053	<0.0053	<0.0053	<0.0053	<0.0052	0.083	0.48	0.031 J			<0.0050
Indeno[1,2,3-cd]pyrene	mg/Kg	8270D		1.15	21.1		<0.0097	<0.0097	<0.0097	<0.0097	<0.0099	<0.0095	0.37	0.27	0.12			<0.0093
Naphthalene	mg/Kg	8270D	0.6582	5.52	24.1		<0.0058	<0.0058	<0.0058	0.0061 J	<0.0059	<0.0057	0.064	2.1	0.67			<0.0055
Phenanthrene	mg/Kg	8270D					<0.0052	<0.0052	<0.0052	0.0089 J	<0.0053	<0.0051	1.4	2.4	0.67			<0.0050
Pyrene	mg/Kg	8270D	54.5455	1790	22,600		<0.0074	<0.0075	<0.0075	0.0092 J	<0.0076	<0.0073	2.1	1.8	0.5			0.011 J
Polychlorinated Biphenyls (PCBs	r e																	
PCB-1016	mg/Kg	8082A		4.11	28						<0.0067			<0.0063		<0.0062	<0.0063	
PCB-1221	mg/Kg	8082A		0	0.883						<0.0084			<0.0078		<0.0078	<0.0078	
PCB-1232	mg/Kg	8082A		0.19	0.792						<0.0083			<0.0078		<0.0077	<0.0078	
PCB-1242	mg/Kg	8082A		0.235	0.972						<0.0062			<0.0059		<0.0058	<0.0058	
PCB-1248	mg/Kg	8082A		0.236	0.975						<0.0075			<0.0070		<0.0070	<0.0070	
PCB-1254	mg/Kg	8082A		0.239	1						<0.0041			0.13		<0.0038	0.11	
PCB-1260	mg/Kg	8082A		0.243	1						<0.0093			<0.0088		<0.0087	<0087	
Metals	//	COADE	0.584	0.077		8.3	- 1		4.0	2.5		4.4	5.0	0.0	40	4.0	40	7.0
Arsenic	mg/Kg	6010B		0.677	3		5	7.7	4.6	3.5	5.2	4.4	5.8	6.2	18	1.8	16	7.9
Barium	mg/Kg	6010B	164.8	15,300	100,000	364	42 V	50	29	32 0.00 P	39	36	69	34	53	15 0.22 B	42 0.82 B	23
Cadmium	mg/Kg	6010B 6010B	0.752 360,000*	71.1	985	44	0.19 B	0.40 B 18	0.28 B 13	0.23 B	0.25 B	0.26 B	0.41 B	0.38 B 15	<0.21 35	0.22 B 5.5		0.57 B
Chromium Lead	mg/Kg	6010B	27	400	800	51.6	9.3	22	12	12 8.2	15 9.7	15 9	17 140	22	56	6.9	14 53	9.5
Mercury	mg/Kg mg/Kg	7471A	0.208	3.13	3.13	31.0	0.019	0.018	0.015 J	0.012 J	0.013 J	0.011 J	0.066	0.091	0.07	<0.0058	0.05	0.0078 J
Selenium	mg/Kg	6010B	0.52	391	5840		<0.57	<0.64	<0.60	<0.60	<0.59	<0.58	<0.65	<0.58	<0.67	<0.0056	<0.56	<0.56
Silver	mg/Kg	6010B	0.8491	391	5840		0.27 J	0.24 J	0.23 J	0.19 J	0.24 J	0.23 J	0.28 J	0.18 J	0.72	<0.12	0.22 J	0.21 J
Oranochlorine Pesticides	ilig/Ng	00100	0.0491	391	3040		0.27 3	U.24 J	0.23 3	0.190	0.24 J	0.233	0.20 J	0.10 0	0.72	\0.12	0.22 J	0.213
4,4'-DDD	mg/Kg	8081A		1.9	9.57											<0.00035	<0.00036	
4,4'-DDE	mg/Kg	8081A		2	9.38											0.0013 J	0.003	
4,4'-DDT	mg/Kg	8081A		1.89	8.53											<0.00093	<0.00094	
Aldrin	mg/Kg	8081A		0.04	0.187											<0.00073	<0.00074	
alpha-BHC	mg/Kg	8081A		0.086	0.365											<0.00045	<0.00045	
cis-Chlordane	mg/Kg	8081A														0.0012 J	<0.00090	
beta-BHC	mg/Kg	8081A		0.301	1.28											<0.00055	0.023	
delta-BHC	mg/Kg	8081A														<0.00056	<0.00056	
Dieldrin	mg/Kg	8081A		0.034	0.144											<0.00024	0.0036	
Endosulfan I	mg/Kg	8081A		469	7010											<0.00077	<0.00078	
Endosulfan II	mg/Kg	8081A														<0.00029	<0.00029	
Endosulfan sulfate	mg/Kg	8081A														<0.00032	<0.00033	
Endrin	mg/Kg	8081A	0.1616	19	246											<0.00024	<0.00025	
Endrin aldehyde	mg/Kg	8081A	0.1616	19	246											<0.00030	<0.00030	
Endrin ketone	mg/Kg	8081A														<0.00040	<0.00040	
gamma-BHC (Lindane)	mg/Kg	8081A	0.0023	0.568	2.54											<0.00038	<0.00039	
trans-Chlordane	mg/Kg	8081A														0.00096 J	<0.00047	
Heptachlor	mg/Kg	8081A	0.0662	0.14	0.654											<0.00074	<0.00075	
Heptachlor epoxide	mg/Kg	8081A	0.082	0.072	0.338											<0.00063	<0.00063	
Methoxychlor	mg/Kg	8081A	4.32	316	4100											<0.00034	<0.00035	
Toxaphene	mg/Kg	8081A	0.928	0.493	2.09											<0.0075	<0.0075	
Herbicides		04511		05-	00:-			1			ı						0	
2,4,5-T	mg/Kg	8151A		632	8210											<0.085	<0.086	
2,4-D	mg/Kg	8151A	0.0362	699	9640											<0.099	<0.10	
2,4-DB	mg/Kg	8151A		1900	24,600								-			<0.10	<0.10	
Dicamba	mg/Kg	8151A	0.1553	1900	24,600											<0.073	<0.073	
Dichlorprop	mg/Kg	8151A			0.570											<0.095	<0.096	
Silvex (2,4,5-TP)	mg/Kg	8151A	0.055	506	6,570											<0.090	<0.090	

(1) From WDNR RCLs Worksheet dated December 2018

BOLD = Exceeds RCL or Background Threshold Value



^{--- =} Not analyzed / No established standard

^{* =} Laboratory Control Sample and/or Laboratory Control Sample Duplicate is outside acceptance limits

V = Serial solution exceeds control limits

F1 = Matrix Spike and/or Matrix Spike Duplicate recovery exceeds control limits

J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value

B = Compound was found in the blank and sampl

^{** =} Combined established standard of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene; and 3 & 4 Methylphenol

Sample	1				TW-3	ТВ
Screened Interval (feet bgs)			NR 141.10 PAL	NR 140.10 ES -	10-20	
Sample Time	Units	Method	- Preventative	Enforcement	18:00	
Sampling Date	1		Action Limit (1)	Standard (1)	4/10/2020	4/10/2020
Volatile Organic Compounds (VC	OCs)				11 10/2020	1710/2020
1,1,1,2-Tetrachloroethane	ug/L	8260B	7	70	<23	<0.46
1,1,1-Trichloroethane	ug/L	8260B	40	200	<19	<0.38
1,1,2,2-Tetrachloroethane	ug/L	8260B	0.02	0.2	<20	<0.40
1,1,2-Trichloroethane	ug/L	8260B	0.5	5	<18	< 0.35
1,1-Dichloroethane	ug/L	8260B	85	850	120	<0.41
1,1-Dichloroethene	ug/L	8260B	0.7	7	<20	< 0.39
1,1-Dichloropropene	ug/L	8260B			<15	< 0.30
1,2,3-Trichlorobenzene	ug/L	8260B			<23	<0.46
1,2,3-Trichloropropane	ug/L	8260B	12	60	<21	<0.41
1,2,4-Trichlorobenzene	ug/L	8260B	14	70	<17	<0.34
1,2,4-Trimethylbenzene**	ug/L	8260B	96	480	6800	<0.36
1,2-Dibromo-3-Chloropropane	ug/L	8260B	0.02	0.2	<100 *	<2.0
1,2-Dibromoethane	ug/L	8260B	0.005	0.05	<19	<0.39
1,2-Dichlorobenzene 1,2-Dichloroethane	ug/L	8260B 8260B	60 0.5	600	<17 <20	<0.33 <0.39
1,2-Dichloroethane 1,2-Dichloropropane	ug/L ug/L	8260B 8260B	0.5	5 5	<20 <21	<0.39
1,3,5-Trimethylbenzene**	ug/L ug/L	8260B 8260B	96	480	2700	<0.43
1,3,5-1 nmethylbenzene	ug/L ug/L	8260B	60	600	<20 <20	<0.25
1,3-Dichloropropane	ug/L ug/L	8260B			<18	<0.40
1,4-Dichlorobenzene	ug/L ug/L	8260B	15	75	<18	<0.36
2,2-Dichloropropane	ug/L	8260B			<22	<0.44
2-Chlorotoluene	ug/L	8260B			<16	<0.31
4-Chlorotoluene	ug/L	8260B			<17	<0.35
Benzene	ug/L	8260B	0.5	5	170	<0.15
Bromobenzene	ug/L	8260B			<18	<0.36
Bromochloromethane	ug/L	8260B			<21	<0.43
Bromodichloromethane	ug/L	8260B	0.06	0.6	<19	<0.37
Bromoform	ug/L	8260B	0.44	4.4	<24	<0.48
Bromomethane	ug/L	8260B	1	10	<40	<0.80
Carbon tetrachloride	ug/L	8260B	0.5	5	<19	<0.38
Chlorobenzene	ug/L	8260B			<19	< 0.39
Chloroethane	ug/L	8260B	80	400	35 J	<0.51
Chloroform	ug/L	8260B	0.6	6	<19	<0.37
Chloromethane	ug/L	8260B	3	30	<16	<0.32
cis-1,2-Dichloroethene	ug/L	8260B	7	70	200	<0.41
cis-1,3-Dichloropropene	ug/L	8260B	0.04	0.4	<21	<0.42
Dibromochloromethane	ug/L	8260B	6	60	<24	<0.49
Dibromomethane	ug/L	8260B	200	4000	<14	<0.27
Dichlorodifluoromethane Ethylbenzene	ug/L	8260B 8260B	200 140	1000 700	<34 1500	<0.67 <0.18
Ethylbenzene Hexachlorobutadiene	ug/L ug/L	8260B 8260B	0.1	700	1500 <22	<0.18 <0.45
Isopropyl ether	ug/L ug/L	8260B	0.1		<14	<0.45
Isopropyl etner Isopropylbenzene	ug/L ug/L	8260B			410	<0.28
Methyl tert-butyl ether	ug/L ug/L	8260B	12	60	<20	<0.39
Methylene Chloride	ug/L ug/L	8260B	0.5	5	<82	<1.6
Naphthalene	ug/L	8260B	10	100	680 B	<0.34
n-Butylbenzene	ug/L	8260B			1800	<0.39
N-Propylbenzene	ug/L	8260B			850	<0.41
p-Isopropyltoluene	ug/L	8260B			970	<0.36
sec-Butylbenzene	ug/L	8260B			730	<0.40
Styrene	ug/L	8260B	10	100	<19	<0.39
tert-Butylbenzene	ug/L	8260B			77	<0.40
Tetrachloroethene	ug/L	8260B	0.5	5	<19	<0.37
Toluene	ug/L	8260B	160	800	80	<0.15
trans-1,2-Dichloroethene	ug/L	8260B	20	100	<17	< 0.35
trans-1,3-Dichloropropene	ug/L	8260B	0.04	0.4	<18	<0.36
Trichloroethene	ug/L	8260B	0.5	5	<8.2	<0.16
Trichlorofluoromethane	ug/L	8260B			<21	<0.43
Vinyl chloride	ug/L	8260B	0.02	0.2	<10	<0.20
Xylenes, Total	ug/L	8260B	800	4,000	3500	<0.22



Sample					TW-3	TB
Screened Interval (feet bgs)			NR 141.10 PAL	NR 140.10 ES -	10-20	
Sample Time	Units	Method	- Preventative	Enforcement	18:00	
Sampling Date	i		Action Limit (1)	Standard (1)	4/10/2020	4/10/2020
Semivolatile Organic Compound	s (SVOCs)					
1-Methylnaphthalene	ug/L	8270D			2900 J	
2-Methylnaphthalene	ug/L	8270D			4400	
Acenaphthene	ug/L	8270D			<490	
Acenaphthylene	ug/L	8270D			<420	
Anthracene	ug/L	8270D	600	3000	<530	
Benzo[a]anthracene	ug/L	8270D			<89	
Benzo[a]pyrene	ug/L	8270D	0.02	0.2	<160	
Benzo[b]fluoranthene	ug/L	8270D	0.02	0.2	<130	
Benzo[g,h,i]perylene	ug/L	8270D			<590	
Benzo[k]fluoranthene	ug/L	8270D			<100	
Chrysene	ug/L	8270D	0.02	0.2	<110	
Dibenz(a,h)anthracene	ug/L	8270D			<80	
Fluoranthene	ug/L	8270D	80	400	<720	
Fluorene	ug/L	8270D	80	400	<390	
Indeno[1,2,3-cd]pyrene	ug/L	8270D			<120	
Naphthalene	ug/L	8270D	10	100	13000	
Phenanthrene	ug/L	8270D			1100 J	
Pyrene	ug/L	8270D	50	250	<670	
Dissolved RCRA Metals						
Arsenic	ug/L	6020A	1	10	420	
Barium	ug/L	6020A	400	2000	1300	
Cadmium	ug/L	6020A	0.5	5	16	
Chromium	ug/L	6020A	10	100	610	
Lead	ug/L	6020A	1.5	15	1800	
Mercury	ug/L	7470A	0.2	2	1	
Selenium	ug/L	6020A	10	50	<49	
Silver	ug/L	6020A	10	50	1.9 J	

(1) From 2019 WDNR Ch. NR 140, Wis. Adm. Code public health groundwater quality standards

Italics = Exceeds NR 140 Preventative Action Limit (PAL)

BOLD = Exceeds NR 140 Enforcement Standard (ES)

- --- = Not analyzed / No established standard
- $^{\star} = \text{Laboratory Control Sample and/or Laboratory Control Sample Duplicate is outside acceptance limits}$
- J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value
- $\mbox{\bf B}$ = Compound was found in the blank and sample
- ** The combined total of 1,2,4 and 1,3,5-TMB



	ı								ı								
	SUB-SLAB V	/APOR VRSL	SSV-1	SSV-2	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12	SS-13
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMEN	T PRE-DEVELOPMEN	T PRE-DEVELOPMENT
		LARGE COMMERCIAL /	6/12/2020	6/12/2020	12/4/2020	12/4/2020	12/4/2020	NS	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/16/2020	12/4/2020
CHEMICAL (ug/m ³)	RESIDENTIAL	INDUSTRIAL	ug/m³	ug/m ³	ug/m³	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
1,1,1-Trichloroethane	170,000	2,200,000	< 2.7	88	< 4.98	35	63	NS	< 49.8	225	7.1 J	11.6	0.6 J	157	< 2.49	22.3	< 0.249
1,1,2,2-Tetrachloroethane	1.6	21	< 2.5	< 16	< 6.5	< 3.25	< 3.25	NS	< 65	< 3.25	< 3.25	< 0.325	< 0.325	< 3.25	< 3.25	< 0.325	< 0.325
1,1,2-Trichloroethane	0.7	8.8	< 0.98	< 6.3	< 5.16	< 2.58	< 2.58	NS	< 51.6	< 2.58	< 2.58	< 0.258	< 0.258	< 2.58	< 2.58	< 0.258	< 0.258
1,1-Dichloroethane	600	7,700	7.1 J	5500	1510	610	480	NS	14700	222	< 1.87	0.84	2.48	890	1220	0.68	0.88
1,1-Dichloroethene	7,000	88,000	< 0.79	8.7 J	< 4.2	< 2.1	< 2.1	NS	< 42	< 2.1	< 2.1	< 0.21	< 0.21	4.8 J	< 2.1	< 0.21	< 0.21
1,2,4-Trichlorobenzene	700	8,800	< 12	< 76	< 13.14	< 6.57	< 6.57	NS	< 131.4	< 6.57	< 6.57	< 0.657	< 0.657	< 6.57	< 6.57	< 0.657	< 0.657
1,2,4-Trimethylbenzene	210	2,600	< 2.5	290	< 5.66	4000 10	17.2	NS	4400	7.8 J	3.4 J	0.93	1.52	30.9	2.94 J	0.74 J	2.4
1,2-Dichlorobenzene	700	8,800	< 4.6	< 29	< 4.7	< 2.35	< 2.35	NS	< 47	< 2.35	< 2.35	< 0.235	< 0.235	< 2.35	< 2.35	< 0.235	< 0.235
1,2-Dichloroethane	36	470	< 1	< 6.5	< 4.8	< 2.4	< 2.4	NS	< 48	< 2.4	< 2.4	< 0.24	< 0.24	< 2.4	< 2.4	< 0.24	< 0.24
1,2-Dichloropropane	14	180	< 1.2 < 2.2	< 7.4 < 14 *	< 5.6 < 8.92	< 2.8	< 2.8	NS NS	< 56 < 89.2	< 2.8	< 2.8	< 0.28	< 0.28	< 2.8	< 2.8	< 0.28	< 0.28 < 0.446
1,2-Dichlorotetrafluoroethane 1,3.5-Trimethylbenzene	210	2,600	< 2.2	190	< 4.64	940	760	NS NS	1280	< 4.46	< 2.32	0.294 J	0.39 J	< 4.46 203	< 4.40	< 0.446	< 0.446 0.69 J
1,3-Butadiene			NA	NA	< 2.86	< 1.43	< 1.43	NS	< 28.6	< 1.43	< 1.43	< 0.143	< 0.143	< 1.43	< 1.43	< 0.232	< 0.143
1,3-Dichlorobenzene			< 2.4	17 J	< 6.04	< 3.02	< 3.02	NS	< 60.4	< 3.02	< 3.02	< 0.302	< 0.302	< 3.02	< 3.02	< 0.302	< 0.302
1,4-Dichlorobenzene	8	110	2.8 J	< 15	< 6.04	< 3.02	6 J	NS	< 60.4	7.2 J	7.2 J	< 0.302	3.4	< 3.02	7.2 J	1.02	2.88
1,4-Dioxane	18	250	< 2.7	< 17	< 3.14	< 1.57	< 1.57	NS	< 31.4	< 1.57	< 1.57	< 0.157	< 0.157	< 1.57	< 1.57	< 0.157	< 0.157
2-Hexanone			NA	NA	< 4.44	< 2.22	< 2.22	NS	< 44.4	< 2.22	< 2.22	< 0.222	0.246 J	< 2.22	< 2.22	< 0.222	0.74
4-Ethyltoluene			NA	NA	< 4.28	2050	< 2.14	NS	2890	< 2.14	< 2.14	0.49 J	0.294 J	37	< 2.14	< 0.214	0.49 J
Acetone	106,667	1,400,000	160	350 J	28.5	< 2.99	43	NS	1970	8.6 J	23.8	69	27	45	5.9 J	NA	57
Acrolein			NA	NA	< 1.88	< 0.94	< 0.94	NS	< 18.8	< 0.94	< 0.94	< 0.094	< 0.094	< 0.94	< 0.94	< 0.094	< 0.094
Benzene	120	1,600	5 J	42	19.2	256	< 1.36	NS	9300	< 1.36	< 1.36	1.72	0.192 J	5.7	< 1.36	< 0.136	1.56
Benzyl Chloride	1.9	25	< 4.9	< 31	< 4.18	< 2.09	< 2.09	NS	62 J	< 2.09	< 2.09	< 0.209	< 0.209	< 2.09	< 2.09	< 0.209	< 0.209
Bromodichloromethane	2.53	33	< 2.9	< 19	< 7.48	< 3.74	< 3.74	NS	< 74.8	< 3.74	< 3.74	< 0.374	< 0.374	< 3.74	< 3.74	< 0.374	< 0.374
Bromoform	86.6	1,100	< 2.3	< 15	< 8.28	< 4.14	< 4.14	NS	< 82.8	< 4.14	< 4.14	< 0.414	< 0.414	< 4.14	< 4.14	< 0.414	< 0.414
Bromomethane	17.3	220	< 2.2	< 14	< 4	< 2	< 2	NS	< 40	< 2	< 2	< 0.2	< 0.2	< 2	< 2	< 0.2	< 0.2
Carbon Disulfide	2,433	31,000	5.4 J	< 5.6	< 2.76	< 1.38	< 1.38	NS	2360	< 1.38	< 1.38	9.9	2.58	6.8	< 1.38	0.84	114
Carbon Tetrachloride Chlorobenzene	156 173	2,000 2,200	< 1.1	< 7.2 < 4.7	< 6.14 < 5.02	< 3.07 < 2.51	< 3.07 < 2.51	NS NS	< 61.4 < 50.2	< 3.07 < 2.51	< 3.07 < 2.51	< 0.307 < 0.251	< 0.307 < 0.251	< 3.07 < 2.51	< 3.07 < 2.51	< 0.307 < 0.251	< 0.307 < 0.251
Chloroethane	33,333	440,000	< 1.9	< 4.7	< 5.02 125	< 2.51 8.2	< 2.51	NS NS	< 50.2 1180	< 2.51 < 1.59	< 2.51	< 0.251	< 0.251	< 2.51		< 0.251 < 0.159	< 0.251 < 0.159
Chloroform	3,100	39,000	< 0.78	25 J	< 6	< 3	< 3	NS	< 60	< 3	< 1.59	0.139 0.49 J	< 0.139	< 3	< 1.59 < 3	0.68 J	< 0.139
Chloromethane	3,100	39,000	< 3.4	< 22	< 16.62	< 8.31	< 8.31	NS	< 166.2	< 8.31	< 8.31	< 0.831	< 0.831	< 8.31	< 8.31	< 0.831	< 0.831
cis-1,2-Dichloroethene			< 0.99	710	< 3.94	65	36	NS	198	33	< 1.97	0.36 J	0.238 J	34	< 1.97	< 0.197	< 0.197
cis-1,3-Dichloropropene			< 1.8	< 11	< 4.68	< 2.34	< 2.34	NS	< 46.8	< 2.34	< 2.34	< 0.234	< 0.234	< 2.34	< 2.34	< 0.234	< 0.234
Cyclohexane	3,333	44,000	5.1 J	61 J	185	330	< 2.12	NS	27500	< 2.12	< 2.12	0.45 J	< 0.212	4.8 J	< 2.12	< 0.212	< 0.212
Dibromochloromethane			< 1.4	< 9.3	< 7.52	< 3.76	< 3.76	NS	< 75.2	< 3.76	< 3.76	< 0.376	< 0.376	< 3.76	< 3.76	< 0.376	< 0.376
Dichlorodifluoromethane	3,300	44,000	4.4 J	< 11	< 5.26	2.97 J	4.9 J	NS	168	< 2.63	< 2.63	2.27	2.57	< 2.63	< 2.63	2.37	2.42
EDB (1,2-Dibromoethane)	0.157	2	< 1.3	< 8.4	< 6.84	< 3.42	< 3.42	NS	< 68.4	< 3.42	< 3.42	< 0.342	< 0.342	< 3.42	< 3.42	< 0.342	< 0.342
Ethanol			NA	NA	54	35	77	NS	1180	13.8	470	1.62	16.8	< 1.52	< 1.52	NA	108 10
Ethyl Acetate			NA	NA	< 3.52	< 1.76	< 1.76	NS	< 35.2	< 1.76	< 1.76	< 0.176	1.12	< 1.76	< 1.76	< 0.176	< 0.176
Ethylbenzene	370	4,900	2.1 J	46 J	< 4.06	1000	< 2.03	NS	4800	< 2.03	< 2.03	1.82	0.43 J	13	< 2.03	0.217 J	1.3
Heptane			NA	NA	8.2 J	500	< 2.65	NS	22700	< 2.65	< 2.65	26.1	1.02	8.6	< 2.65	0.74 J	1.43
Hexachlorobutadiene	4.3	56	< 8.5	< 55	< 9.78	< 4.89	< 4.89	NS	< 97.8	< 4.89	< 4.89	< 0.489	< 0.489	< 4.89	< 4.89	< 0.489	< 0.489
Hexane	1,400	18,000	11 J	660	350	1770	< 2.35	NS	174000	< 2.35	< 2.35	11.1	< 0.235	21.5	< 2.35	1.2	7.9
Isopropyl Alcohol		4.400	< 6.9	< 44	9.3	5.2	9.1	NS	128	2.46 J	12.3	0.91	1.89	2.95 J	2.46 J	0.61	3.4
m&p-Xylene	333	4,400	< 3.2	47 J	< 7.54	<i>970</i> < 1.78	< 3.77 < 1.78	NS NS	3900	< 3.77 < 1.78	< 3.77	3.3	1.26	18.2	< 3.77 < 1.78	0.65 J < 0.178	2.43 7.7
Methyl ethyl ketone (MEK) Methyl isobutyl ketone (MIBK)	17,333 10,333	220,000 130,000	22 J < 5.5	< 35 < 35	< 3.56 < 3.36	< 1.78	< 1.78	NS NS	320 < 33.6	< 1.78	6.8 < 1.68	11.8 8.3	3.7 J 0.41	14.4	< 1.78 < 1.68	< 0.178	7.7 0.49 J
Methyl Methacrylate			< 5.5 NA	< 35 NA	< 3.36	< 1.68	< 1.68	NS NS	< 33.6		< 1.68	< 0.217	< 0.41	6.1 < 2.17	< 2.17	< 0.168	0.49 J < 0.217
Methyl tert-butyl ether (MTBE)	3,700	47,000	< 4.7	< 30	< 3.2	< 1.6	< 1.6	NS NS	< 43.4	< 2.17	< 1.6	< 0.217	< 0.217	< 1.6	< 1.6	< 0.217	< 0.217
Methylene chloride	21,000	260,000	< 13	< 81	< 3.18	< 1.59	< 1.59	NS	< 31.8	< 1.59	< 1.59	15.1	< 0.16	< 1.59	< 1.59	< 0.16	48
wearyiene chionae	21,000	200,000	` 13	\ 01	\ J.10	× 1.07	× 1.07	INO	\ 31.0	× 1.07	× 1.07	10.1	\ U.107	\ 1.07	1.07	V. 139	40



	SUB-SLAB \	/APOR VRSL	SSV-1	SSV-2	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12	SS-13
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT
		LARGE COMMERCIAL /	6/12/2020	6/12/2020	12/4/2020	12/4/2020	12/4/2020	NS	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/16/2020	12/4/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m³	ug/m ³	ug/m³	ug/m3											
Naphthalene	28	360	< 10	< 64	< 13.5	< 6.75	< 6.75	NS	< 135	< 6.75	< 6.75	5.4	< 0.675	< 6.75	< 6.75	< 0.675	< 0.675
o-Xylene	3,300	44,000	1.7 J	38 J	< 4.36	71	< 2.18	NS	530	< 2.18	< 2.18	1.78	0.61 J	71	< 2.18	0.303 J	1.21
Propene			NA	NA	27.5	25	< 0.79	NS	1590	< 0.79	< 0.79	8.5	1.39	17.9	< 0.79	< 0.079	5.6
Styrene	3,333	44,000	< 2.6	< 16	< 3.62	< 1.81	< 1.81	NS	< 36.2	< 1.81	< 1.81	0.38 J	0.72	< 1.81	< 1.81	< 0.181	1.23



	SUB-SLAB \	/APOR VRSL	SSV-1	SSV-2	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12	SS-13
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMEN	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMEN	T PRE-DEVELOPMEN	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT
		LARGE COMMERCIAL /	6/12/2020	6/12/2020	12/4/2020	12/4/2020	12/4/2020	NS	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/16/2020	12/4/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m³	ug/m³	ug/m³	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
Tetrachloroethene	1,400	18,000	< 1.2	100	< 5.56	14.3	15.6	NS	1340	4.1 J	8.1 J	13.4	3.4	14.9	< 2.78	8.8	0.95
Tetrahydrofuran	7,000	88,000	< 4.3	< 27	< 2.62	< 1.31	< 1.31	NS	< 26.2	< 1.31	< 1.31	1.36	< 0.131	< 1.31	< 1.31	< 0.131	0.85
Toluene	170,000	2,200,000	9	76	< 3.68	22.6	4.9 J	NS	530	4.5 J	3.8 J	3.2	4.3	9	4.5 J	6	9.3
trans-1,2-Dichloroethene			< 0.63	< 4.1	19.8	31.3	9.1	NS	1870	41	< 2.31	< 0.231	0.32	< 2.31	< 2.31	< 0.231	< 0.231
trans-1,3-Dichloropropene			< 0.95	< 6.1	< 3.96	< 1.98	< 1.98	NS	< 39.6	< 1.98	< 1.98	< 0.198	< 0.198	< 1.98	< 1.98	< 0.198	< 0.198
Trichloroethene (TCE)	70	880	15	310	< 4.74	61	190	NS	161	141	93	8	1.66	70	17.1	15.6	5.9
Trichlorofluoromethane			2.2 J	< 6.5	< 6.74	< 3.37	< 3.37	NS	< 67.4	< 3.37	< 3.37	1.24	1.4	< 3.37	< 3.37	1.18	1.35
Trichlorotrifluoroethane			NA	NA	208	380	330	NS	380	44	< 4.02	3.6	0.54	340	10 J	0.84 J	0.54 J
Vinyl acetate	700	8,800	< 2.5	< 16	< 4.06	< 2.03	< 2.03	NS	< 40.6	< 2.03	< 2.03	< 0.203	< 0.203	< 2.03	< 2.03	< 0.203	< 0.203
Vinyl Chloride	57	2,800	< 1.7	16 J	< 2.96	5.1	< 1.48	NS	830	< 1.48	< 1.48	< 0.148	< 0.148	< 1.48	< 1.48	< 0.148	< 0.148

Comments

All results in micrograms per cubic meter (ug/m³)

"J" Flag = Analyte detected between Limit of Detection and Limit of Quantitation

"10" Code = Linear Range of Calibration Curve Exceeded

" * " Flag = Laboratory Control Sample or Sample Duplcicates Outside Acceptable Limits

VRSL = Vapor Risk Screening Levels

NA = Not Analyzed

NS = Not Sampled

BOLD indicates detection is above Large Commercial / Industrial VRSLs

Italics indicates detection is above Residential VRSLs



Part																		
CHESTOR Section CHESTOR Section Sect		SUB-SLAB \	/APOR VRSL	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20	SS-21	SS-22	SS-23	SS-24	SS-25	SS-26	SS-27	SS-28
Control Cont		AF = 0.03		PRE-DEVELOPMENT	PRE-DEVELOPMEN	PRE-DEVELOPMENT	PRE-DEVELOPMENT											
Control Cont				12/16/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/16/2020	12/4/2020	12/3/2020	12/3/2020	12/3/2020	12/16/2020	12/16/2020	12/3/2020	12/3/2020	12/3/2020
1.12-Printerprinters	CHEMICAL (ug/m ³)	RESIDENTIAL		ug/m3	ug/m3	ug/m3	ug/m3											
1.11 1.12	1,1,1-Trichloroethane	170,000	2,200,000	20.9	25	34	360	150	57	210	20.9	9.7	17.7	1.2	31.3	59	26.7	7.7
11 13 13 13 14 15 15 15 15 15 15 15	1,1,2,2-Tetrachloroethane	1.6	21	< 0.325	< 3.25	< 3.25	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325
Library Deliver 1,70,000 1,80,000 2,00	1,1,2-Trichloroethane	0.7	8.8	< 0.258	< 2.58	< 2.58	< 0.258	< 0.258	< 0.258	2.61	< 0.258	< 0.258	< 0.258	< 0.258	2.12	< 0.258	< 0.258	< 0.258
1.74 1.74	1,1-Dichloroethane	600	7,700	1740	400	3.2 J	0.76	2.28	1.76	50	< 0.187	< 0.187	< 0.187	0.96	2.72	< 0.187	0.2 J	< 0.187
1.24 millsperseese	1,1-Dichloroethene	7,000	88,000	28.6	< 2.1	< 2.1	< 0.21	< 0.21	< 0.21	0.67	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21
Description	1,2,4-Trichlorobenzene	700	8,800	< 0.657	< 6.57	< 6.57	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657
12 December 36	1,2,4-Trimethylbenzene	210	2,600	0.49 J	< 2.83	< 2.83	0.98	0.98	2.7	0.83 J	2.01	0.93	2.26	1.37	0.64 J	1.52	8	1.62
12-District programs	1,2-Dichlorobenzene	700	8,800	< 0.235	< 2.35	< 2.35	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235
1.20 1.20	1,2-Dichloroethane	36	470	< 0.24	< 2.4	< 2.4	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24
1.3 1.3	1,2-Dichloropropane	14	180	< 0.28	< 2.8	< 2.8	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28
13-Binderformer											< 0.446				< 0.446	< 0.446		
1-30-bring-through	· · · · · · · · · · · · · · · · · · ·	210	2,600									+						
Head of the content	,																	
1-4-Descript 17	,																	
	1,4-Dichlorobenzene	8		0.84 J	-					2.64				1.92				
Action	, , , , , , , , , , , , , , , , , , ,	18	250		_						< 0.157		< 0.157					
Acetane																		
Accretion	,																	
Bennyelment 127		106,667	1,400,000															
Bernyx Charides																		
Bromorehome 2.51 33			ļ															
Bromoferme 9.86 1.100 < 0.414	,																	
Bronomethane 1.73 2.20									<u> </u>									
Carbon Dissulfide 1,2433 1,31,000 1,031 1,032 1,030 1,031 1,031 1,032 1,030 1,031 1,032 1,030 1,031 1,032 1,030 1,031 1,032 1,030 1,031 1,032 1,030 1,031 1			,															
Cathor Tetrachfordes 7.63 2.000 0.307 0.307 0.307 0.307 0.44 1.32 0.007 0.38 J 0.307 0.307 0.30 J 0.57 J 0.55 J 0.44 J 0.307		-								< 0.2								
Chlorobenzene 173 2,200 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.251 < 0.25			, , , , , , , , , , , , , , , , , , , ,		•					0.5								
Chicroelhane 33,333 440,000 < 0.159 < 1.59 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0.159 < 0																		
Chloroform 3,100 3,000 1,12 C 3 Chloromethane 3,100 3,000 Chloromethane 3,100 3,000 Chloromethane 3,100 3,000 Chloromethane 3,100 3,000 C 0,831 C 0,83																		
Chloromethane 3,700 39,000 < 0.831							<u> </u>		<u> </u>									
Cis-1,2-Dichloroethene		·	ļ		-													
Cis-1,3-Dichloropropene		3,100																
Cyclohexane 3,333 44,000 < 0.212																		
Dibromochloromethane																		
Dichlorodifiluoromethane 3,300 44,000 2.62 < 2.63 < 2.63 < 2.63 < 2.47 2.42 2.67 < 2.13 2.03 1.98 2.42 3.4 2.87 3.2 2.67 2.32	· · · · · · · · · · · · · · · · · · ·																	
EDB (1,2-Dibromoethane) 0.757 2									1									
Ethanol NA 22.2 10.7 54 29.3 NA 21.3 67 69 122 NA NA 56 138 102 Ethyl Acetate 4.0.176 < 0.176 < 1.76 < 1.76 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.176 < 0.177 < 0.177 < 0.177 < 0.177 < 0.177 < 0.177 < 0.177 < 0.177 < 0.177 < 0.177 <																		
Ethyl Acetate	·																	
Ethylbenzene 370 4,900 < 0.203 < 2.03 < 2.03 < 2.03																		
Heptane	· ·	370	4.900						1									
Hexachlorobutadiene 4.3 56 < 0.489 < 4.89 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.489 < 0.	,		·															
Hexane 1,400 18,000 0.85 < 2.35 < 2.35 1.27 1.27 0.63 J < 0.235 0.88 0.85 0.74 J 9.3 0.95 1.83 1.06 1.27 1.		4.3	56											< 0.489				< 0.489
Isopropyl Alcohol 2.38 4.2 2.7 J 2.73 1.57 4.1 1.06 4.1 2.73 4.1 0.74 1.08 2.78 2.09 7.2 Methyl ethyl ketone (MEK) 17,333 220,000 1.24 < 1.78 < 1.78 < 1.78 4.1 1.56 1.04 J 1.26 1.78 1.56 1.04 J 1.26 Methyl isobutyl ketone (MIBK) 10,333 130,000 0.94 < 1.68 < 1.68 0.37 J 0.286 J < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 < 0.217 <																		
m&p-Xylene 333 4,400 0.69 J < 3.77	Isopropyl Alcohol		•	2.38										0.74	1.08		2.09	
Methyl ethyl ketone (MEK) 17,333 220,000 1.24 < 1.78		333	4,400		< 3.77				1.04 J				2.04					
Methyl isobutyl ketone (MIBK) 10,333 130,000 0.94 < 1.68	. ,		220,000	1.24	< 1.78	< 1.78	4							< 0.178		2.27	5.2	18.6
Methyl tert-butyl ether (MTBE) 3,700 47,000 < 0.16 < 1.6 < 1.6 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16 < 0.16		10,333	130,000	0.94	< 1.68	< 1.68	0.37 J	0.286 J	< 0.168	< 0.168	0.86	0.41 J	0.65	< 0.168	0.205 J	0.82	0.74	1.1
	Methyl Methacrylate			< 0.217	< 2.17	< 2.17	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217
Methylene chloride 21,000 260,000 25.4 < 1.59	Methyl tert-butyl ether (MTBE)	3,700	47,000	< 0.16	< 1.6	< 1.6	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
	Methylene chloride	21,000	260,000	25.4	< 1.59	< 1.59	< 0.159	< 0.159	19.1	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159



	SUB-SLAB \	/APOR VRSL	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20	SS-21	SS-22	SS-23	SS-24	SS-25	SS-26	SS-27	SS-28
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT														
		LARGE COMMERCIAL /	12/16/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/16/2020	12/4/2020	12/3/2020	12/3/2020	12/3/2020	12/16/2020	12/16/2020	12/3/2020	12/3/2020	12/3/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m3														
Naphthalene	28	360	< 0.675	< 6.75	< 6.75	< 0.675	< 0.675	< 0.675	< 0.675	0.84 J	< 0.675	0.94 J	< 0.675	< 0.675	< 0.675	0.89 J	< 0.675
o-Xylene	3,300	44,000	0.26 J	< 2.18	< 2.18	0.78	0.61 J	0.39 J	0.52 J	0.82	0.69 J	0.95	0.39 J	0.39 J	0.74	2.34	0.78
Propene			< 0.079	< 0.79	< 0.79	7.4	0.57	< 0.079	1.17	0.5	6.8	0.38	< 0.079	< 0.079	1.07	0.52	6
Styrene	3,333	44,000	< 0.181	< 1.81	< 1.81	1.19	1.11	0.34 J	1.11	0.89	0.64	1.66	0.34 J	0.255 J	1.06	3.4	0.77



	SUB-SLAB \	/APOR VRSL	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20	SS-21	SS-22	SS-23	SS-24	SS-25	SS-26	SS-27	SS-28
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMEN	T PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMEN	T PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	T PRE-DEVELOPMENT
		LARGE COMMERCIAL /	12/16/2020	12/4/2020	12/4/2020	12/4/2020	12/4/2020	12/16/2020	12/4/2020	12/3/2020	12/3/2020	12/3/2020	12/16/2020	12/16/2020	12/3/2020	12/3/2020	12/3/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
Tetrachloroethene	1,400	18,000	4.3	3.4 J	< 2.78	1.56	3.3	1.49	10.5	1.09	0.48 J	7.4	< 0.278	51	23.4	23.8	4.1
Tetrahydrofuran	7,000	88,000	< 0.131	< 1.31	< 1.31	0.56	< 0.131	< 0.131	< 0.131	0.59	< 0.131	< 0.131	< 0.131	< 0.131	< 0.131	< 0.131	< 0.131
Toluene	170,000	2,200,000	6.9	4.1 J	4.5 J	9.1	7.4	12	5.4	2.37	2.41	2.67	7.3	6.4	5.3	4.5	5.3
trans-1,2-Dichloroethene			258	15.1	< 2.31	< 0.231	5.5	< 0.231	9.8	< 0.231	< 0.231	< 0.231	< 0.231	7.3	0.238 J	< 0.231	< 0.231
trans-1,3-Dichloropropene			< 0.198	< 1.98	< 1.98	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198
Trichloroethene (TCE)	70	880	15.1	6.4 J	246	16.8	1730	25.3	63000	31.4	51	360	1.07	85000	6000	3700	250
Trichlorofluoromethane			1.4	< 3.37	< 3.37	1.74	2.53	3.5	1.4	1.35	1.69	1.52	1.69	1.69	1.35	1.46	1.74
Trichlorotrifluoroethane			35	4.6 J	< 4.02	0.61 J	0.54 J	0.61 J	0.46 J	0.54 J	0.54 J	0.61 J	0.77 J	0.77 J	0.54 J	0.61 J	0.54 J
Vinyl acetate	700	8,800	< 0.203	< 2.03	< 2.03	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203
Vinyl Chloride	57	2,800	2.66	< 1.48	< 1.48	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148

Comments

All results in micrograms per cubic meter (ug/m³)

"J" Flag = Analyte detected between Limit of Detection and Limit of Quantitation

"10" Code = Linear Range of Calibration Curve Exceeded

" * " Flag = Laboratory Control Sample or Sample Duplcicates Outside Acceptable I

VRSL = Vapor Risk Screening Levels

NA = Not Analyzed

NS = Not Sampled

BOLD indicates detection is above Large Commercial / Industrial VRSLs

Italics indicates detection is above Residential VRSLs



	SUB-SLAB V	/APOR VRSL	SS-29	SS-30	SS-31	SS-32	SS-33	SS-34	SS-35	SS-36	SS-37	SS-38	SS-39	SS-40	SS-41	SS-42	SS-43
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	T PRE-DEVELOPMENT	PRE-DEVELOPMENT
		LARGE COMMERCIAL /	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/16/2020	12/3/2020	12/16/2020	NS	12/16/2020	12/16/2020	12/16/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
1,1,1-Trichloroethane	170,000	2,200,000	6.6	2.61	1.09	29	8.2	9.6	2.83	4.3	3.3	7.9	< 498	NS	234	62	32
1,1,2,2-Tetrachloroethane	1.6	21	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 650	NS	< 32.5	< 0.325	< 0.325
1,1,2-Trichloroethane	0.7	8.8	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 516	NS	< 25.8	< 0.258	< 0.258
1,1-Dichloroethane	600	7,700	< 0.187	< 0.187	< 0.187	< 0.187	< 0.187	< 0.187	< 0.187	< 0.187	< 0.187	< 0.187	960 J	NS	540	28.5	390
1,1-Dichloroethene	7,000	88,000	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 420	NS	< 21	< 0.21	< 0.21
1,2,4-Trichlorobenzene	700	8,800	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 1314	NS	< 65.7	< 0.657	< 0.657
1,2,4-Trimethylbenzene	210	2,600	1.13	1.18	0.54 J	1.18	1.62	1.62	3.5	1.08	0.64 J	0.88 J	< 566	NS	74 J	1.13	< 0.283
1,2-Dichlorobenzene	700	8,800	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 470	NS	< 23.5	< 0.235	< 0.235
1,2-Dichloroethane	36	470	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 480	NS	< 24	< 0.24	< 0.24
1,2-Dichloropropane	14	180	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 560	NS	< 28	< 0.28	< 0.28
1,2-Dichlorotetrafluoroethane			< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 892	NS	< 44.6	< 0.446	< 0.446
1,3,5-Trimethylbenzene	210	2,600	0.294 J	0.34 J	< 0.232	0.294 J	0.44 J	0.39 J	1.18	0.294 J	< 0.232	< 0.232	< 464	NS	44 J	0.245 J	< 0.232
1,3-Butadiene			< 0.143	< 0.143	< 0.143	< 0.143	< 0.143	< 0.143	< 0.143	< 0.143	< 0.143	< 0.143	< 286	NS	< 14.3	< 0.143	< 0.143
1,3-Dichlorobenzene			< 0.302	< 0.302	< 0.302	< 0.302	< 0.302	< 0.302	< 0.302	< 0.302	< 0.302	< 0.302	< 604	NS	< 30.2	< 0.302	< 0.302
1,4-Dichlorobenzene	8	110	6.3	3.8	2.4	6.7	6.6	9.8	4.4	5	1.08	3.2	< 604	NS	< 30.2	1.2	< 0.302
1,4-Dioxane	18	250	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 314	NS	< 15.7	< 0.157	< 0.157
2-Hexanone			1.84	< 0.222	0.49 J	0.41 J	< 0.222 J	0.45 J	0.86	0.37 J	0.65 J	0.37 J	< 444	NS	< 22.2	< 0.222	39
4-Ethyltoluene			< 0.214	0.245 J	< 0.214	< 0.214	< 0.214	< 0.214	0.78	< 0.214	0.245 J	< 0.214	< 428	NS	29.4 J	0.39 J	< 0.214
Acetone	106,667	1,400,000	18.6	18.9	63	9.6	12.1	15.6	45	21.4	NA	17.4	NA	NS	NA	NA	NA
Acrolein	100		< 0.094	< 0.094	< 0.094	< 0.094	0.275	< 0.094	2.7	0.138 J	< 0.094	0.64	< 188	NS	229	< 0.094	< 0.094
Benzene	120	1,600	0.77	2.27	0.57	0.45	0.35 J	0.35 J	0.83	0.57	0.35 J	0.32 J	5100	NS	217	0.224 J	208
Benzyl Chloride	1.9	25	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 418	NS	< 20.9	< 0.209	< 0.209
Bromodichloromethane	2.53	33	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 748	NS	< 37.4	< 0.374	< 0.374
Bromoform	86.6	1,100	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 828	NS	< 41.4	< 0.414	< 0.414
Bromomethane	17.3	220	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 400	NS	< 20	< 0.2	< 0.2
Carbon Disulfide	2,433	31,000 2.000	0.87	60 < 0.307	3.08	0.4 J < 0.307	3.14	1.21	1.37 0.44 J	0.34 J 0.5 J	0.68	0.4 J	< 276	NS NS	1180	1.28	1.03
Carbon Tetrachloride	156	,	< 0.307	< 0.307 0.277 J	< 0.307		< 0.307	0.38 J			< 0.307	0.5 J	< 614	NS NS	< 30.7	< 0.307	< 0.307
Chlorobenzene	173 33,333	2,200 440,000	< 0.251	< 0.159	< 0.251 < 0.159	< 0.251 < 0.159	< 0.251 < 0.159	< 0.251 < 0.159	< 0.251 < 0.159	< 0.251 < 0.159	< 0.251 < 0.159	< 0.251 < 0.159	< 502 1790	NS NS	< 25.1 69	< 0.251 < 0.159	< 0.251 9.9
Chloroethane Chloroform	3,100	39,000	< 0.159	< 0.159 0.49 J	< 0.159	< 0.159	1.56	< 0.159	2.77	< 0.159 0.83 J	0.63 J	< 0.159	< 600	NS NS	< 30	< 0.159 0.92 J	1.51
Chloromethane	3,100	39,000	< 0.831	< 0.831	< 0.831	< 0.831	< 0.831	< 0.831	< 0.831	< 0.831	< 0.831	< 0.831	< 1662	NS	< 83.1	< 0.831	< 0.831
cis-1,2-Dichloroethene	3,100	39,000	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 394	NS	1860	21.5	9.4
cis-1,3-Dichloropropene			< 0.147	< 0.137	< 0.147	< 0.147	< 0.147	< 0.147	< 0.197	< 0.197	< 0.147	< 0.147	< 468	NS	< 23.4	< 0.234	< 0.234
Cyclohexane	3,333	44,000	< 0.234	< 0.212	< 0.212	< 0.212	< 0.212	< 0.212	0.234 0.31 J	< 0.212	< 0.234	< 0.212	16400	NS	460	< 0.212	320
Dibromochloromethane			< 0.212	< 0.272	< 0.212	< 0.212	< 0.212	< 0.212	< 0.376	< 0.212	< 0.212	< 0.212	< 752	NS	< 37.6	< 0.212	< 0.376
Dichlorodifluoromethane	3,300	44,000	2.37	2.67	1.19	2.18	2.27	2.22	2.42	2.52	2.92	2.57	< 526	NS	< 26.3	2.67	3.02
EDB (1,2-Dibromoethane)	0.157	2	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 684	NS	< 34.2	< 0.342	< 0.342
Ethanol			42	0.9	1.11	37	34	19.7	41	56	NA	18.4	NA	NS	NA	NA	NA
Ethyl Acetate			< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 352	NS	< 17.6	< 0.176	< 0.176
Ethylbenzene	370	4,900	0.48 J	1.13	0.35 J	0.43 J	0.61 J	0.303 J	2.34	0.43 J	0.303 J	1	< 406	NS	48 J	0.52 J	15
Heptane			1.84	3.03	1.06	1.06	1.23	< 0.265	9.2	1.23	1.06	1.64	1230 J	NS	57 J	1.02	31.2
Hexachlorobutadiene	4.3	56	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 978	NS	< 48.9	< 0.489	< 0.489
Hexane	1,400	18,000	0.53 J	1.59	< 0.235	< 0.235	0.46 J	0.46 J	1.94	0.85	0.63 J	0.247 J	134000	NS	3080	0.7 J	2380
Isopropyl Alcohol			2.43	0.66	0.39	1.35	1.47	1.15	1.45	2.87	1.45	1.08	4100	NS	61	1.5	1.3
m&p-Xylene	333	4,400	1.21	2.34	1.17 J	1.13 J	1.47	0.87 J	6.9	1.13 J	0.78 J	1.78	< 754	NS	56 J	1.13 J	0.65 J
Methyl ethyl ketone (MEK)	17,333	220,000	3.6	1.89	11.2	1.71	1.71	2.51	4.5	2.15	1.47	2.15	< 356	NS	289	< 0.178	< 0.178
Methyl isobutyl ketone (MIBK)	10,333	130,000	1.15	0.33 J	1.47	0.41 J	< 0.168	0.45 J	0.57	0.53 J	0.33 J	0.41 J	< 336	NS	< 16.8	< 0.168	< 0.168
Methyl Methacrylate			< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 0.217	< 434	NS	< 21.7	< 0.217	< 0.217
Methyl tert-butyl ether (MTBE)	3,700	47,000	< 0.16	0.18 J	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 320	NS	< 16	< 0.16	< 0.16
Methylene chloride	21,000	260,000	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 318	NS	< 15.9	< 0.159	< 0.159



	SUB-SLAB VAPOR VRSL		SS-29	SS-30	SS-31	SS-32	SS-33	SS-34	SS-35	SS-36	SS-37	SS-38	SS-39	SS-40	SS-41	SS-42	SS-43
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT														
		LARGE COMMERCIAL /	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/16/2020	12/3/2020	12/16/2020	NS	12/16/2020	12/16/2020	12/16/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m3														
Naphthalene	28	360	< 0.675	< 0.675	< 0.675	< 0.675	< 0.675	0.94 J	1.15 J	< 0.675	< 0.675	< 0.675	< 1350	NS	< 67.5	< 0.675	< 0.675
o-Xylene	3,300	44,000	0.56 J	1.04	0.39 J	0.52 J	0.74	0.48 J	2.86	0.48 J	0.303 J	0.78	< 436	NS	52 J	0.52 J	0.91
Propene			0.43	6.1	3.8	2.67	2.53	3.6	3.2	3.8	< 0.079	3.3	< 158	NS	< 7.9	< 0.079	< 0.079
Styrene	3,333	44,000	0.77	0.98	0.47 J	0.68	1.11	0.68	0.68	0.55 J	0.255 J	1.23	< 362	NS	< 18.1	0.298 J	< 0.181



	SUB-SLAB VAPOR VRSL		SS-29	SS-30	SS-31	SS-32	SS-33	SS-34	SS-35	SS-36	SS-37	SS-38	SS-39	SS-40	SS-41	SS-42	SS-43
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMEN	T PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMEN	T PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT	PRE-DEVELOPMENT
		LARGE COMMERCIAL /	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/3/2020	12/16/2020	12/3/2020	12/16/2020	NS	12/16/2020	12/16/2020	12/16/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
Tetrachloroethene	1,400	18,000	< 0.278	9.4	0.88 J	< 0.278	98	640	5.3	9.2	21.2	3.05	< 556	NS	285	1.7	0.48 J
Tetrahydrofuran	7,000	88,000	< 0.131	0.59	0.71	< 0.131	0.41 J	< 0.131	0.74	0.68	< 0.131	< 0.131	< 262	NS	< 13.1	< 0.131	< 0.131
Toluene	170,000	2,200,000	4.9	7.3	2.86	3.5	4.4	1.2	3.9	3.2	8.2	9.1	830 J	NS	87	9.5	< 0.184
trans-1,2-Dichloroethene			< 0.231	< 0.231	< 0.231	< 0.231	< 0.231	< 0.231	0.277 J	< 0.231	< 0.231	< 0.231	< 462	NS	< 23.1	3.6	5.9
trans-1,3-Dichloropropene			< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 396	NS	< 19.8	< 0.198	< 0.198
Trichloroethene (TCE)	70	880	6.5	6.3	3.6	54	570	253	2620	1010	117	112	< 474	NS	1400	150	144
Trichlorofluoromethane			1.57	1.63	0.62 J	1.52	1.29	2.02	2.19	1.8	1.57	1.85	< 674	NS	< 33.7	1.18	1.69
Trichlorotrifluoroethane			0.54 J	0.54 J	< 0.402	0.54 J	0.54 J	0.61 J	0.54 J	0.61 J	0.69 J	0.61 J	< 804	NS	< 40.2	8.4	1.15 J
Vinyl acetate	700	8,800	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 406	NS	< 20.3	< 0.203	< 0.203
Vinyl Chloride	57	2,800	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	360 J	NS	23 J	< 0.148	1.84

Comments

All results in micrograms per cubic meter (ug/m³)

"J" Flag = Analyte detected between Limit of Detection and Limit of Quantitation

"10" Code = Linear Range of Calibration Curve Exceeded

" * " Flag = Laboratory Control Sample or Sample Duplcicates Outside Acceptable I

VRSL = Vapor Risk Screening Levels

NA = Not Analyzed

NS = Not Sampled

BOLD indicates detection is above Large Commercial / Industrial VRSLs

Italics indicates detection is above Residential VRSLs



	SUB-SLAB V	/APOR VRSL	SS-44	SS-45	SS-46	SS-47	SS-48	SS-49	SS-50	SS-51
	AF = 0.03	AF = 0.01			PRE-DEVELOPMENT					
•	AI = 0.03	LARGE								
3		COMMERCIAL /	12/16/2020	12/3/2020	12/16/2020	12/16/2020	12/3/2020	12/4/2020	12/16/2020	12/16/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
1,1,1-Trichloroethane	170,000	2,200,000	84	8.4	1.69	0.92	36	6.4	0.76 J	1040
1,1,2,2-Tetrachloroethane	1.6	21	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325	< 0.325
1,1,2-Trichloroethane 1,1-Dichloroethane	0.7	8.8	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258	< 0.258
1,1-Dichloroethene	7,000	7,700 88,000	32 < 0.21	< 0.187 < 0.21	< 0.187 < 0.21	< 0.187 < 0.21	< 0.187 < 0.21	< 0.187 < 0.21	< 0.187 < 0.21	< 0.187 < 0.21
1,2,4-Trichlorobenzene	7,000	8,800	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.657	< 0.21
1,2,4-Trimethylbenzene	210	2,600	< 0.037	1.08	0.78 J	0.74 J	1.03	0.78	1.03	0.037 0.74 J
1,2-Dichlorobenzene	700	8,800	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235	< 0.235
1,2-Dichloroethane	36	470	< 0.233	< 0.233	< 0.233	< 0.233	< 0.233	< 0.233	< 0.233	< 0.233
1,2-Dichloropropane	14	180	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24
1,2-Dichlorotetrafluoroethane			< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 0.446	< 0.446
1,3,5-Trimethylbenzene	210	2,600	< 0.440	< 0.440	< 0.440	< 0.440	< 0.440	< 0.440	< 0.440	< 0.232
1,3-Butadiene			< 0.232	< 0.232	< 0.232	< 0.232	< 0.232	< 0.232	< 0.232	< 0.232
1,3-Dichlorobenzene			< 0.143	< 0.143	< 0.302	< 0.143	< 0.302	< 0.143	< 0.302	< 0.302
1,4-Dichlorobenzene	8	110	1.44	8.5	1.14	1.08	7.9	2.22	1.32	1.26
1,4-Dioxane	18	250	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157	< 0.157
2-Hexanone			< 0.222	< 0.222	< 0.222	< 0.222	0.33 J	0.37	< 0.222	< 0.222
4-Ethyltoluene			< 0.214	< 0.214	0.294 J	0.34 J	< 0.214	< 0.214	0.39 J	0.294 J
Acetone	106,667	1,400,000	NA	29	NA	NA	7.8	16.3	NA	NA
Acrolein	,		< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094	< 0.094
Benzene	120	1,600	0.192 J	1.18	< 0.136	0.16 J	< 0.136	0.45	0.224 J	0.7
Benzyl Chloride	1.9	25	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209	< 0.209
Bromodichloromethane	2.53	33	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374	< 0.374
Bromoform	86.6	1,100	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414	< 0.414
Bromomethane	17.3	220	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Carbon Disulfide	2,433	31,000	< 0.138	2.46	0.218 J	0.187 J	0.37 J	0.47	< 0.138	0.56
Carbon Tetrachloride	156	2,000	< 0.307	0.38 J	< 0.307	0.315 J	0.315 J	0.38 J	0.38 J	< 0.307
Chlorobenzene	173	2,200	< 0.251	< 0.251	< 0.251	< 0.251	< 0.251	< 0.251	< 0.251	< 0.251
Chloroethane	33,333	440,000	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159	< 0.159
Chloroform	3,100	39,000	0.88 J	< 0.3	< 0.3	< 0.3	0.63 J	< 0.3	< 0.3	3.4
Chloromethane	3,100	39,000	< 0.831	0.89 J	< 0.831	< 0.831	< 0.831	< 0.831	< 0.831	< 0.831
cis-1,2-Dichloroethene			< 0.197	< 0.197	< 0.197	< 0.197	< 0.197	< 0.197	< 0.197	< 0.197
cis-1,3-Dichloropropene			< 0.234	< 0.234	< 0.234	< 0.234	< 0.234	< 0.234	< 0.234	< 0.234
Cyclohexane	3,333	44,000	< 0.212	< 0.212	< 0.212	< 0.212	< 0.212	< 0.212	< 0.212	< 0.212
Dibromochloromethane			< 0.376	< 0.376	< 0.376	< 0.376	< 0.376	< 0.376	< 0.376	< 0.376
Dichlorodifluoromethane	3,300	44,000	2.52	2.42	3.3	3.07	2.42	2.37	3.11	1.88
EDB (1,2-Dibromoethane)	0.157	2	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342	< 0.342
Ethanol			NA	21.7	NA	NA	131 10	27.1	NA	NA
Ethyl Acetate			< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 0.176	< 0.176
Ethylbenzene	370	4,900	0.52 J	< 0.203	0.35 J	0.48 J	0.217 J	0.56 J	0.43 J	
Heptane			1.43	< 0.265	0.98	1.02	< 0.265	2.62	1.23	1.43
Hexachlorobutadiene	4.3	56	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489	< 0.489
Hexane	1,400	18,000	0.81	< 0.235	0.78	0.74 J	0.42 J	0.6 J	0.6 J	
Isopropyl Alcohol	222	4.400	0.74	1.99	1.11	0.93	5.5	1.38	2.31	2.73
m&p-Xylene	333	4,400	1.04 J	0.61 J	0.95 J	1.08 J	0.65 J	1.47	1.26	0.95 J
Methyl ethyl ketone (MEK)	17,333	220,000	< 0.178	5.4	< 0.178	< 0.178	1.36	1.59	< 0.178	2.27
Methyl isobutyl ketone (MIBK)	10,333	130,000	< 0.168 < 0.217	0.286 J < 0.217	< 0.168 < 0.217	< 0.168 < 0.217	0.33 J < 0.217	0.286 J < 0.217	< 0.168 < 0.217	< 0.168 < 0.217
Mothyl Mothagandata								. < 11/1/		I < U / I /
Methyl Methacrylate Methyl tert-butyl ether (MTBE)	3,700	47,000	< 0.16	< 0.217	< 0.217	< 0.16	< 0.217	< 0.16	< 0.217	< 0.16



	SUB-SLAB V	APOR VRSL	SS-44	SS-45	SS-46	SS-47	SS-48	SS-49	SS-50	SS-51
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT							
		LARGE COMMERCIAL /	12/16/2020	12/3/2020	12/16/2020	12/16/2020	12/3/2020	12/4/2020	12/16/2020	12/16/2020
CHEMICAL (ug/m³)	RESIDENTIAL	INDUSTRIAL	ug/m3							
Naphthalene	28	360	< 0.675	0.78 J	< 0.675	< 0.675	1.05 J	< 0.675	< 0.675	< 0.675
o-Xylene	3,300	44,000	0.48 J	0.303 J	0.35 J	0.48 J	0.303 J	0.61 J	0.52 J	0.43 J
Propene			< 0.079	3.2	< 0.079	< 0.079	2.65	1.7	< 0.079	< 0.079
Styrene	3,333	44,000	0.34 J	0.38 J	0.34 J	0.34 J	5	1.15	0.34 J	0.255 J



	SUB-SLAB VAPOR VRSL		SS-44	SS-45	SS-46	SS-47	SS-48	SS-49	SS-50	SS-51
	AF = 0.03	AF = 0.01	PRE-DEVELOPMENT							
		LARGE COMMERCIAL /	12/16/2020	12/3/2020	12/16/2020	12/16/2020	12/3/2020	12/4/2020	12/16/2020	12/16/2020
CHEMICAL (ug/m ³)	RESIDENTIAL	INDUSTRIAL	ug/m3							
Tetrachloroethene	1,400	18,000	1.09	3.2	5.9	0.41 J	33	2.1	1.9	6.4
Tetrahydrofuran	7,000	88,000	< 0.131	< 0.131	< 0.131	< 0.131	< 0.131	< 0.131	< 0.131	< 0.131
Toluene	170,000	2,200,000	10.1	1.43	9.6	10.9	0.83	11.1	13.4	8.2
trans-1,2-Dichloroethene			< 0.231	< 0.231	< 0.231	< 0.231	< 0.231	< 0.231	< 0.231	< 0.231
trans-1,3-Dichloropropene			< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198	< 0.198
Trichloroethene (TCE)	70	880	13.7	148	2.04	3.6	52	170	1.82	870
Trichlorofluoromethane			1.01 J	1.57	1.46	1.8	1.4	1.46	2.47	1.24
Trichlorotrifluoroethane			0.54 J	0.61 J	0.54 J	0.77 J	0.54 J	0.61 J	0.77 J	0.69 J
Vinyl acetate	700	8,800	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203	< 0.203
Vinyl Chloride	57	2,800	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148	< 0.148

Comments

All results in micrograms per cubic meter (ug/m³)

"J" Flag = Analyte detected between Limit of Detection and Limit of Quantitation

"10" Code = Linear Range of Calibration Curve Exceeded

" * " Flag = Laboratory Control Sample or Sample Duplcicates Outside Acceptable I

VRSL = Vapor Risk Screening Levels

NA = Not Analyzed

NS = Not Sampled

BOLD indicates detection is above Large Commercial / Industrial VRSLs

Italics indicates detection is above Residential VRSLs



APPENDICES



APPENDIX A

Conceptual Site Plans





